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THE CONDITIONING OF SELF-ESTEEM AS A FUNCTION OF NEED FOR APPROVAL

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in the Department
of Psychology in the Graduate School of Arts and
Sciences of Duke University

1967

ABSTRACT

(Psychology-Clinical)

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The purpose of the present experiment was to study the conditioning and generalization of changes in individuals' self-ratings, and to investigate the relationship between the need for social approval, conditionability, and the learning of self-enhancing vs. threatening material. The roles of "awareness" and motivation to gain reinforcement were also investigated and discussed.

During a Group Testing Session, male undergraduate subjects filled out a number of questionnaires measuring attitudes towards the self. On the basis of one of these questionnaires, subjects were divided into groups designated as high or low in their need for social approval. Two-thirds of a second questionnaire, which measures the relative positivity of subjects' self-ratings on a wide variety of attributes, was re-administered in the presence of an experimenter. This experimenter reinforced subjects (1) for increasing their ratings of positive phrases, (2) for increasing their

ratings of negative phrases, or (3) on a random basis. The remaining third of the questionnaire, along with two other questionnaires administered during the Group Testing Session, was re-administered by a second experimenter during a Generalization Session.

It was predicted that: (1) subjects reinforced for increasing their ratings of positive phrases would show more learning effects than randomly reinforced subjects; (2) subjects with a high need for social approval would show greater learning effects than subjects low in their need for social approval, but only in the case of reinforcement for increases of positive ratings; (3) learned changes in self-ratings would generalize to measures of self-esteem administered by the second experimenter; and (4) subjects would "learn without awareness," i.e., they would tend to be unable to verbalize the response-reinforcement relationship. The latter prediction was based on the manner in which the experiment was initially explained to the subjects, and on the complexity of the conditioning paradigm employed.

The results of the experiment tended to support the first of these predictions: Subjects who were systematically reinforced for increasing their ratings of positive phrases tended to assign higher ratings to these phrases than subjects who were randomly reinforced. When the data were re-analyzed excluding subjects who rated themselves low in their motivation to gain reinforcement, the difference between the Groups attained statistical significance. However, systematically reinforced subjects

were found to maintain their performance rate during the conditioning blocks, whereas randomly reinforced subjects showed marked decrements in performance.

The results did not provide confirmation for the second prediction in the case of positive ratings. In the case of negative ratings, though, subjects who were high in their need for social approval comprised the only Group who did not show an increment in performance on the last trial block of the Conditioning Session. Moreover, when subjects low in their motivation to gain reinforcement were excluded from analysis of the data, high need for approval subjects who were reinforced for increasing their ratings of negative phrases were found to rate themselves increasingly _positively_ during the Conditioning Session.

The third prediction was also partially confirmed by the experimental results: Subjects who had shown conditioning effects on their positivity ratings continued to perform at a higher rate than randomly reinforced subjects on two of the three generalization measures. However, subjects who had been reinforced on negative phrases showed generalization effects on only one of the three generalization measures. On the Questionnaire which yielded significant results, these subjects who had been reinforced on negative phrases rated themselves significantly more _positively_ than randomly reinforced subjects, but significantly more _negatively_ than subjects reinforced on positive phrases.

The fourth prediction was quite strongly supported: Subjects who

showed conditioning effects tended to be unable to verbalize the relationship between the reinforcement and their ratings of the critical phrases.

Following the presentation of the results, the major experimental findings were discussed, and related to the psychotherapeutic process. Also, the importance of carefully analyzing subjects' cognitive behaviors and motivational states in verbal conditioning experiments was pointed out.

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THE CONDITIONING OF SELF-ESTEEM AS A FUNCTION OF NEED FOR APPROVAL

Chapter I

INTRODUCTION

This study concerns the conditioning and generalization of changes in the degree of positivity or negativity of subjects' (Ss') self-ratings. It was predicted that short-term changes in Ss' self-esteem could be induced by means of social reinforcement, and that these learned changes would transfer to generalization measures administered by a second experimenter (E_2). More specific predictions regarding Ss' performance on the conditioning task were based on (1) the degree of Ss' need for social approval (NFA) and (2) the nature of the reinforced responses. The findings are discussed and related to the psychotherapeutic process.

The Self-Concept, Self-Esteem, and Psychotherapy

A number of authors working within the client-centered framework (e.g., Butler and Haigh, 1954; Rogers and Dymond, 1954; Rudikoff, 1954;

Shlien, Mosak, and Dreikurs, 1962; Truax and Carkhuff, 1964) have reasoned that successful outcome in psychotherapy should include a change in the self-concept towards a more generally positive view of the self, i.e., an increase in self-esteem. These investigators measured patients' self-esteem by assessing the discrepancies between their descriptions of self and ideal self on Q sorts. The correlations were found to increase from pre-counseling to follow-up on Ss who were judged as having improved on a number of other criteria. Furthermore, there is some evidence to suggest that the "underlying feelings" of the clients change, and remain changed over a period of time. Dymond (1954), for example, found changes in self-esteem reflected in TAT stories, while Butler and Haigh (1954) found that statistically significant changes in correlations between self and ideal self remained at the time of a follow-up study.

Psychotherapy as a Conditioning Process

Until quite recently, studies which demonstrated that verbal behavior could be influenced by social reinforcement took place in laboratory settings, and employed such limited response classes as plural nouns (e.g., Greenspoon, 1955) and personal pronouns (e.g., Taffel, 1955). In more recent experiments, a number of the parameters of verbal conditioning have been investigated in laboratory analogues to psychotherapy

("quasi-therapy" settings in which Ss were allowed to respond relatively freely) as well as in actual psychotherapeutic interviews (see review by Krasner, 1962). On the basis of a growing body of empirical findings, several authors (Bandura, 1961; Greenspoon, 1962; Krasner, 1962; Sulzer, 1962; Truax, 1966) have concluded that changes which occur in psychotherapy are at least in part induced by therapists' conditioning of certain classes of verbal responses in their patients.

If psychotherapy does indeed involve conditioned changes in Ss' verbalizations, an alternative explanation of the findings reported by the client-centered group presents itself. The client-centered therapist (indeed, any therapist) may unwittingly reinforce his client's positive self-references. The client, motivated to (1) please his therapist, (2) secure his therapist's interest and involvement, (3) gain feedback from him, and (4) generally respond in a way which he feels could lead to his eventual improvement (Frank, 1961), may succumb to these subtle influences. In time, he may learn to respond verbally in a way which suggests to his therapist that his self-esteem has become heightened, and that he generally feels better about himself. Evidence that conditioning of this type occurs was furnished in a recent study by Truax (1966). This author found that a client-centered therapist "reinforced" his patient by offering significantly more "warm" and "accepting" remarks after certain specific classes of patient verbalizations than after others. The patient's rate of emitting the "reinforced" response classes increased

significantly during the course of therapy.

The "hello-goodbye" effect (Hathaway, 1948) could also bias the client-centered findings: Patients entering psychotherapy may be eager to reveal discrepancies between self and ideal self, whereas terminating patients may tend to deny them in order to please their therapists. Also, patients may tend to rate themselves more positively at the time of their termination because of a need to reduce dissonance between the cognition of still suffering from various problems and the cognition of having terminated treatment after spending a good deal of effort, time, and money in a relatively uncomfortable interpersonal encounter.

The argument which suggests that changes in self-ratings may represent a generalization of conditioning effects does not necessarily conflict with findings which suggest that profound, longstanding changes occur in patients. It implies rather that (1) the changes (or at least one important class of these changes) tend to occur by means of lawful, observable, potentially controllable reinforcement procedures, and (2) the verbal responses learned under such circumstances generalize at the very least to paper and pencil personality measures outside of the therapeutic situation. It has been argued in this connection that changes in relatively simple, overt verbal and behavioral responses tend to generalize to patients' "overall adjustment" (Eysenck, 1960; Wolpe, 1958).

As a first step in studying the relationship between changes in self-esteem and the functioning of reinforcement principles, it was necessary

to ascertain that personally meaningful material could be conditioned. A number of investigators studied positive and negative self-references made by Ss during brief interviews in which they were asked to describe themselves (Ganzer and Sarason, 1964; Koenig, 1962; Marlowe, 1962; Moos, 1963; Rogers, 1960; Sarason, B. R., 1956; Sarason, I. G., 1958; 1962; Sarason and Ganzer, 1962; 1963). Briefly, Ss in these studies did tend to respond to social reinforcements such as "mm-hmm," "I see," and "yeah" by altering their rate of emission of positive and negative self-references. As in other verbal conditioning studies, learning was found to be affected by individual difference variables, situational variables, and subject-experimenter interaction variables.

Once the conditionability of personally meaningful material was established, investigators set out to determine whether or not response generalization would occur (Drennen, 1963; Moos, 1963; Rogers, 1960; Sarason, B. R., 1956; Singer, 1961; Ullman, Krasner, and Collins, 1961; Wimsatt and Vestre, 1963). The findings of these studies are not highly conclusive, but do suggest that the extent to which responses generalize depends in part on the extent to which (1) the original and generalization response measures overlap or correlate and (2) the original and generalization stimulus situations vary in time, place, or person.

In two quite recent studies, experimentally induced changes in self-ratings were shown to (1) generalize to another, related measure of the self-concept (Gergen, 1965), and (2) to persist at least until the time of

a six week follow-up (Haas and Maehr, 1965).

The Role of Awareness in Verbal Conditioning and Generalization

Conditioning. In a review of studies on "behavior without awareness," Adams (1957) concluded that the evidence with regard to the phenomenon of verbal "learning without awareness" was equivocal. In a number of studies conducted since then, experiments allegedly demonstrating the phenomenon of "learning without awareness" have been called into serious question on the grounds of methodological shortcomings. For example, Levin (1961), using a Taffel (1955) procedure of reinforcing first person pronouns, found that (1) increasing the length and specificity of the awareness interview led to the categorization of a greater number of Ss as "aware," and (2) differences between the performance of Experimental and Control Ss could be accounted for most parsimoniously by differences in reported awareness. Spielberger and DeNike (1962), also controlling more carefully for the effects of awareness, failed to replicate the findings of Greenspoon (1955), who reported the learning of plural nouns by Ss who were "unaware" of the response-reinforcement contingency; and Stein (1966) demonstrated that the "learning without awareness" findings reported by experimenters using a Thorndike word-number association task (Hirsch, 1957; Philbrick and Postman, 1955;

Sassenrath, 1959; 1962) failed to adequately control for Ss' tendency to use consciously mediated hypotheses during the conditioning procedure.

Dulany (1961) has argued that verbal conditioning may always involve problem solving by means of consciously mediated hypotheses. A less extreme position has been taken by Farber (1963), who reasoned that the question of whether individuals do or do not learn without awareness can be much more meaningfully restated. "The search for 'real' awareness," he wrote, "is a search for a chimera. The only important question is whether, by defining awareness in a given way, and specifying both the contents of the response, and the procedures used to evoke it, one can better account for variation in subjects' behavior" (1963, p. 196). In a number of recent studies (e.g., those cited above by Levin, 1961; Spielberger and DeNike, 1962; and Stein, 1966) predictive precision was gained by the use of such an approach. However, in these and other experiments which investigated the role of awareness in human operant conditioning, the probability of Ss' being able to verbalize the response-reinforcement contingency was high, because Ss' task was to learn a relatively simple, easily discernible response class within an implicitly problem-solving context. "Learning without awareness" has also been reported in experiments employing much more life-like situations (e.g., Centers, 1963; Gergen, 1965). However, these findings were based on post-conditioning interviews not entirely devoid of the methodological shortcomings alluded to earlier. Therefore, the question of whether

"unaware" Ss (i.e., Ss who are unable to verbalize the response-reinforcement relationship) will show evidence of conditioning in a relatively complicated, life-like situation remains to be answered.

Generalization. To the extent that Ss demonstrate generalization effects in verbal conditioning studies, the question of how these effects are mediated becomes relevant. Reinforcement theorists who contend that "awareness" is not a necessary variable in human operant conditioning would hold that response generalization is also not dependent on Ss' ability to verbalize the contingency of reinforcement. On the other hand, theorists who contend that Ss will learn only if they are (1) aware of the response-reinforcement relationship, (2) motivated to gain reinforcement, and (3) acting upon a conscious decision to seek reinforcement, would have to attribute generalization effects to the continued operation of these same factors. Subjects who are aware of having changed their self-presentation may also tend to maintain, or generalize, these changes because of a need for consistency of self-presentation (Lecky, 1945).

Verbal Conditioning, Attitude Change, and Need for Approval

A number of investigators have employed verbal conditioning techniques in studies of the approval motive, as measured by Ss' scores on the Marlowe-Crowne Social Desirability Scale (M-C SDS). Crowne and

Strickland (1961), for example, confirmed the hypothesis that Ss high in their need for social approval (Hi NFA Ss) would exhibit significantly greater learning effects on the Greenspoon plural nouns task (Greenspoon, 1955) than Ss low in their need for approval (Lo NFA Ss). In an experiment investigating the effects of vicarious reinforcement, Marlowe, Beecher, Cook, and Doob (1964) had Hi and Lo NFA Ss observe E reinforcing a third person. The Hi NFA Ss showed significantly greater increments in their use of "I" and "We" than Lo NFA Ss on a subsequent Taffel sentence construction task (Taffel, 1955).

In a study by Marlowe (1962), the responses which were conditioned consisted of more personally meaningful material than in the studies cited above. Marlowe reinforced Ss' positive self-references during a 15 minute interview. He also found that Hi NFA Ss showed significantly greater increments in performance than Lo NFA Ss. These findings held true until the last third of the experiment, during which the performance of the Hi NFA Group dropped off considerably. Rogers (1960) conditioned negative as well as positive self-references. He found that Ss reinforced for the former type of response showed significant increments in performance, whereas reinforcement for positive self-references merely served to retard extinction of that response class. Crowne and Marlowe suggest that the findings of studies on NFA and conditionability reflect the "greater sensitivity and responsiveness [of Hi NFA Ss] to social reinforcers" (1964, p. 60).

In the verbal conditioning studies cited above, "awareness" was found to be unrelated to the level of conditioning. This was even true of the Marlowe et al. experiment, which employed a careful and extended interview based on one used earlier by Spielberger, Levin, and Shepard (1962). However, in an experiment which used essentially the same format as the Crowne and Strickland (1961) study, Dulany (1961) found that increments in plural noun responses were related primarily to Ss' use of consciously mediated "series associative sets." Crowne and Strickland (1961) stated in a footnote that they applied Dulany's method of analysis to their data and still found evidence of "learning without awareness."

In an attempt to replicate the Crowne and Strickland study, Spielberger, Berger, and Howard (1963) employed an undergraduate E and the Taffel sentence construction task (Taffel, 1955). They found a relationship between awareness and conditioning, but none between NFA and conditioning. Though the evidence was not entirely clear, these authors suggested that there also seemed to be little relationship between NFA and awareness. Crowne and Marlowe (1964) attempted to explain these findings by pointing out that Ss in the Spielberger et al. (1963) study may have tended to view themselves as being manipulated by a peer to respond in a given way on a fairly simple and obvious task. In still another study which replicated the results of experiments positing a relationship between NFA and conditionability (Strickland, 1962), the author

used a criterion of "awareness" based on a carefully designed post-conditioning interview. She found that Ss able to verbalize the contingency of reinforcement did indeed show more evidence of learning. However, Hi NFA Ss who were not able to verbalize the principle also tended to increase their rate of emission of the reinforced response class.

Apropos of Farber's comments on the "chimera" of awareness, the inconsistent findings in these studies may relate in part to the major focus of these researchers on the presence or absence of the phenomenon of "awareness," rather than on the relationship between their specific experimental variables, procedures, and questioning techniques, on the one hand, and Ss' responses and post-conditioning verbalizations, on the other.

Self-Esteem, Need for Approval, and Conditionability

Since Hi NFA Ss tend to describe themselves in highly favorable terms, one would expect that they would obtain relatively high scores on a variety of measures of self-esteem based on conscious self-description. In pilot work preceding the present experiment, the author obtained some confirmation of this expectation. The product moment correlation coefficient between the M-C SDS scores and the Self-Valuation Triads

Test[1] ratings of 70 female undergraduate Ss was found to be .35 ($p < .05$). More recently, a correlation of .35 between the M-C SDS and the Janis and Field Self-Esteem Questionnaire was reported by Greenbaum (1966) in a study of attitude change.

This relationship between self-esteem and the need for social approval raises an interesting question in light of findings reported in a number of studies on persuasibility. Since (1) Hi NFA and persuasibility[2] are positively correlated (Crowne and Marlowe, 1964) and (2) Hi NFA and self-esteem are also positively correlated, one might expect self-esteem and persuasibility to have the same relationship. Yet, there is considerable experimental evidence (e.g., Janis, 1953; 1954; Janis and Field, 1959; Janis and Rife, 1959) that an inverse relationship exists between self-esteem and persuasibility.

A. R. Cohen (1959) has offered some theoretical formulations which are useful in attempting to effect a reconciliation between these

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[1] The Self-Valuation Triads Test is a measure of the relative positivity of Ss' self-ratings on a wide variety of attributes. It will be described in some detail in Chapter II.

[2] Although the studies cited in the previous section focused on conditionability, Crowne and Marlowe (1964) cite a number of studies of "suggestibility" and "attitude change" which employed a model closer to the social psychological one of Janis et al. Some more specific empirical support for the close conceptual relationship between conditionability and suggestibility is lent in a study by Dawson, Noblin, and Timmons (1965). These authors found that verbal conditioning proved to be a highly successful predictor of hypnotic susceptibility, which has often been viewed in the literature as one aspect of suggestibility.

seemingly inconsistent findings. Cohen theorized that self-esteem derives from the individual's perceived potentiality for satisfying his important needs. People with high self-esteem, he reasoned, see themselves as having the best possible set of attitudes, and therefore as being able to deal with their environment with maximum effectiveness. The high self-esteem person is threatened by confrontation with a discrepant opinion, and therefore tends to use "avoidant" defenses. This is because if he were to see the correctness or usefulness of the new attitudes, he would have to admit to himself that his basic assumptions about himself had been wrong or unrealistic. On the other hand, low self-esteem individuals might welcome new opinions as possibly providing better tools for more effectively coping with their environment. Therefore, they tend to be vigilant people, sensitized to acquiring new and different attitudes and ideas.

High and low self-esteem Ss, Cohen continues, may be differentially susceptible to persuasion as a function of the relative threat-value of the persuasive communication:

> Communications and/or communicators who threaten an individual's general picture of himself may be expected to influence persons of different levels of self-esteem differentially. Such threatening appeals may be rejected more by those of high self-esteem than by those of low self-esteem. On the other hand, appeals which enhance an individual's self-picture might be accepted more by the highs than by the lows (p. 119).

Cohen's hypothesis is supported by the findings of a number of studies (e.g., Goldstein, 1959; Leventhal and Perloe, 1962; Silverman, 1964). In

one, Block and Thomas (1955) reported a strong positive relationship between degree of self-acceptance, as measured by self and ideal self Q sorts, and defensiveness, as measured by the MMPI K scale. These authors raised the question of whether "satisfaction with self" can be taken as a pure measure of psychological adjustment. The correlation of .35 between self-esteem and NFA, reported above, suggests that it may be possible to control for the extent to which self-esteem scores are influenced by Ss' varying levels of NFA, which has been shown in a number of studies (e.g., Breger, 1966; Kogan and Wallach, 1964) to be strongly related to defensiveness.

Hi NFA Ss, then, tend to (1) have high self-esteem, (2) be defensive, and (3) use avoidant mechanisms under stress (Crowne and Marlowe, 1964; Strickland and Crowne, 1963). Applying Cohen's formulations, it would be expected that Hi NFA Ss might demonstrate greater conditionability if the response class consisted of self-enhancing material than if it consisted of material threatening to the self.

The conditioning view of therapy outlined earlier emphasizes learned changes in Ss' rate of making positive self-references. It is possible that therapists also condition negative self-references, particularly early in therapy when it may be important to help patients focus on negative aspects of themselves (i.e., "overcome resistance"). This technique would be particularly applicable to patients who tend to rely heavily on the use of "avoidant" defenses, since they would be hesitant to discuss aspects

of themselves which would be threatening to their conscious view of themselves. In a study by Strickland and Crowne (1963), Hi NFA patients were found to terminate psychotherapy earlier than Lo NFA patients, and were rated by their therapists as more "defensive" in their early contacts. The authors explain the early terminations in terms of these individuals' defensiveness, vulnerable self-esteem, and unwillingness or inability to appear before the prestigeful therapist in a socially undesirable light. The somewhat paradoxical result was that those patients who were least "conditionable" by virtue of having lower NFA (Crowne and Strickland, 1961; Marlowe, 1962; Marlowe et al., 1964) turned out to be the patients who remained in treatment longer, derived more benefit from it, and presumably were more influenced by their therapist's communications. In summary, the approval of a reinforcing agent may be an equally (or even a more) effective reinforcer for Lo NFA Ss than for Hi NFA Ss if the response class to be learned consists of personally threatening material.

Purposes of the Study

The major purposes of the present experiment were to (1) explore further the extent to which Ss will learn to alter their evaluative self-descriptions in response to social reinforcement; (2) determine the relationship between NFA, conditionability, and response classes consisting

of self-ratings which are (a) enhancing to the self-concept and (b) threatening to the self-concept; (3) determine the extent to which Ss will generalize learned changes in self-ratings; (4) further investigate the possibility of "learning without awareness"; and (5) investigate the roles of "awareness" and motivation to maintain self-consistency in mediating generalization effects.

Hypotheses

1. Subjects who are systematically reinforced for assigning a higher number of points to positive (i.e. self-enhancing) phrases on the SVT Test than they had assigned to them during group testing will show significantly greater learning effects than randomly reinforced Control Ss.

2. Hi NFA Ss who are reinforced on positive phrases will show significantly greater learning effects than Lo NFA Ss reinforced on positive phrases. Hi NFA Ss are not expected to perform at a higher level than Lo NFA Ss in the case of negative phrases because of the threatening nature of the material.

3. Subjects who show significant increments in performance during the conditioning procedure will tend to show generalization effects, i.e., they will tend to maintain these changes (1) on further ratings with a second experimenter not engaged in reinforcing behavior and (2) on other

measures of self-esteem administered by this experimenter.

4. Following the conditioning session, Ss will, in general, be unable to verbalize any relationship between their responses and the reinforcement. This hypothesis relates to the complexity of the conditioning paradigm, and the manner in which the experiment is explained to Ss.

Chapter II

METHOD

Experimental Design

A 3 x 2 design was employed for the conditioning task. Reinforcement was administered for increases in positive ratings, for increases in negative ratings, or on a random basis, to Ss designated as Hi or Lo in their need for social approval. Ninety-two Ss were distributed among six cells as depicted in Table 1.

Following the conditioning task, those Ss who reported having rated themselves more positively (or negatively, depending on which type of phrase they had been reinforced on) than they had during the group testing session were divided into three groups, as follows: (1) An Informed Group consisted of Ss who were told the true purpose of the conditioning procedure, including the nature of the response-reinforcement relationship. (2) An Informed-Control Group were also told that the purpose of the experiment was different from the explanation they had been given earlier, but they were then given another, false explanation. (3) An Uninformed Group were

Table 1

Distribution of Ss During
Conditioning Procedure

NFA	Type of Phrase Reinforced		
	Pos.	Neg.	Rand.
Hi	18	18	10
Lo	18	18	10

led to believe that the true purpose of the experiment had been explained to them at the outset. The purpose of this experimental manipulation will be discussed later in this chapter.

During the generalization task, Ss were administered two measures of self-esteem by the second experimenter (E_2), in counterbalanced order. The generalization triads of the Self-Valuation Triads Test were given last because of the possibility of extinction taking place. The experimental design is outlined in Table 2.

Experimental Procedure

Group testing. The following questionnaires were filled out by all of the men enrolled in the Duke University Introductory Psychology course in the fall semester of 1965:

1. Self-Valuation Triads Test, Group Form (see Appendix A). The Self-Valuation Triads Test (SVT Test) was originally used by Dickoff (1961), and refined by Gergen (1965) and the present author. In Dickoff's study, Ss' scores on the SVT Test were found to be highly reliable over time. The test consists of 72 groups of three descriptive phrases. Each set of three phrases, or triad, contains one positive trait, one neutral trait, and one negative trait. The phrases cover a wide variety of attributes, attitudes, interests, and values. They therefore provide a context

Table 2

Outline of Experiment

I. Group Testing: SVT Test; M-C SDS; Trait Questionnaire; Personality Questionnaire

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II. Conditioning

A. Experimental Groups (N = 72)
(systematically reinforced, 1/2 for positive, 1/2 for negative phrases on Trial Blocks 1-4, SVT Test)

1. Hi NFA Ss (N = 36)
    - a. Aware of Change
        - (1) Informed
        - (2) Control-Informed
        - (3) Uninformed
    - b. Unaware of Change

2. Lo NFA Ss (N = 36)
    - a. Aware of Change
        - (1) Informed
        - (2) Control-Informed
        - (3) Uninformed
    - b. Unaware of Change

B. Control Groups (N = 20)
(randomly reinforced, Trial Blocks 1-4, SVT Test)

1. Hi NFA Ss (N = 10)

2. Lo NFA Ss (N = 10)

Table 2 (continued)

III. Generalization
(all Ss;[a] group not known to E_2)

A. Self-Ideal Measure or Feelings of Adequacy Measure
(counterbalanced)

B. Self-Ideal Measure or Feelings of Adequacy Measure
(counterbalanced)

C. SVT Test, Trial Blocks 5 and 6 ("Extinction Trials")

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[a] Pilot work indicated that there would be a very small attrition rate in number of Ss between conditioning and generalization as a result of the choice given Ss to leave at that point. This will be further explained in the section on Experimental Procedure.

for conditioning which is in some sense analagous to a therapeutic interview, in that Ss evaluate themselves on a large number of personally relevant traits. In order to insure that the evaluative differences between the phrases were clearly recognizable, Gergen included only those phrases which undergraduate raters agreed on to a criterion of at least 70% agreement. The same number of positive, neutral, and negative statements appears in the first, second, and third positions on individual triads. The instructions for the test (also in Appendix A) required the Ss to distribute 10 points among each set of three phrases, assigning the phrase most descriptive of them the highest number of points, and the phrase least descriptive of them the lowest number of points. This method of assigning points makes it possible to detect relatively subtle changes in Ss' self-ratings. Subjects' positivity and negativity scores were calculated by simply summing the total number of points they assigned to positive or negative phrases.

Subjects with extreme scores on the SVT Test (upper and lower 10%) were excluded from the experiment in order to control for regression effects, as well as differences in the amount their ratings could be changed by conditioning procedures. The cells were filled in such a way that each group's initial mean SVT Test score was equal to that of each of the other groups.

2. Marlowe-Crowne Social Desirability Scale (labeled Personal Reaction Inventory in Appendix B). This is a 33-item true-false scale

which was originally devised by Crowne and Marlowe (1960) as a measure of social desirability independent of psychopathology and acquiescence response set. It has subsequently been found to relate empirically to a number of interrelated behaviors which characterize individuals with high and low need for social approval. Crowne and Marlowe describe high scorers as more "conforming, cautious, and persuasible [than low scorers] . . . and their behavior is more normatively anchored, than persons who depict themselves less euphemistically" (1964, p. 189). Subjects in this study were divided into Hi and Lo NFA Groups by a median split on the scale.

3. Personality Questionnaire (see Appendix C). This is a brief questionnaire containing face valid items reflecting feelings of personal adequacy. Subjects are requested to rate themselves on a series of 20 five-point rating scales. The questionnaire was adapted from the Feelings of Inadequacy sub-scale of Janis and Field's Self-Esteem Questionnaire (Hovland and Janis, 1959). A number of previous investigators (e.g., Greenbaum, 1966; Silverman, Ford, and Morganti, 1966) have employed various forms of the Janis and Field questionnaire in studies of attitude change.

4. Trait Questionnaire (see Appendix D). This questionnaire was developed by the author as a measure of self-esteem based on correlations between self and ideal self. In order that the items on which Ss rated themselves would be most salient for the college population studied, all

the male undergraduates in a previous Introductory Psychology course (N = 158) were requested to write down all the traits they could think of which they felt were "important for a Duke undergraduate to have in order to be liked and respected by other Duke students." The Ss indicated which of the traits they felt they had opinions about which differed from the opinions of their peers, and these traits were eliminated from further consideration. They also rated each trait on a five-point scale of how _important_ they felt it was to possess the trait in order to be liked and respected by their peers. The traits were then rank ordered on the basis of the product of their _frequency_ x _importance_ scores, and the traits with the highest ratings were included in the test. (Thirty-nine traits surpassed a preestablished _f_ x _i_ criterion, and were thus included.) Next to each trait on the self and ideal self sub-scales was a 13.5 centimeter line labeled "Not at All" at the left and "Extremely" at the right. On the ideal self sub-scale, Ss were instructed to draw a slash through each line at a place which would indicate how characteristic of them they would like that trait to be. On the self sub-scale, which all Ss filled out last, Ss were instructed to draw the slash according to how characteristic of them they felt the trait actually was. The S's score in both cases was the linear distance (in centimeters) between the end of the scale and the point of intersection of the slash. An unbroken line was used in place of a rating scale so that it would be less likely that Ss would remember their ideal self ratings while rating the traits on the self sub-scale. Also, it was

hoped that more subtle differences in ratings would be detectable through the use of such a rating device. The individual scores derived from this test consist of each S's correlation between his ideal self ratings and his self ratings (Block, 1961).

The Conditioning Session. When S arrived for the experiment, the first experimenter (E_1) greeted him and engaged him in a brief conversation. The tone of this conversation was informal, but professional. During this period, E_1 asked S such questions as (1) "What year of college are you in now?" (2) "How old are you?" and (3) "Where are you from?"

Interview. Following this brief conversation, E_1 said that it was time to get started, and explained the experiment as follows:

> Generally, the purpose of the experiment is to aid in the development of a brief screening interview. In its final form, the interview will be used by several psychologists for the purpose of personality assessment. These psychologists will be involved in a project in which their task will be to make some rapid decisions and judgments about people whom they will only be able to spend about five or ten minutes with. Admittedly, this is a very short time for that purpose, but it is, for a number of reasons, all the time that will be available; also, previous studies have shown that even brief personal contact between graduate school applicants and trained professional interviewers provided a very useful addition to the information gathered from a variety of more impersonal sources. (pause)
>
> In this experiment, Psych. 91 students are being interviewed briefly by one of a number of different experimenters. Each experimenter is employing the same set of standard interviews as the other experimenters with the subjects that he sees. Each subject will be given one of these interviews. In order to determine which interview gives the experimenters the best idea of how the subjects feel about themselves in various areas, both the subjects and the experimenters will fill out a personality questionnaire describing the subject right after the interview. The interview, or set of questions, which best enables the

> experimenters to match the subjects' ratings of themselves in this experiment will be the one which will be used for screening purposes in the upcoming project. Do you have any questions so far? (If so, E_1 repeated appropriate parts of the instructions.)
>
> The interview will be tape recorded, but I can assure you that the material will be anonymous, strictly confidential, and used for research purposes only. In order to keep the interviews standard, I may have to interrupt you at times, so that I can get all the questions I'm going to ask you into the brief time period we'll have. The particular interview I will be administering to you consists of (pause, while E_1 looks through papers) . . . four questions, or general topics. Are you ready for the first one? Good, then--

The interview, which is contained in Appendix E, was then started.

Conditioning procedure. Upon completion of the interview, E_1 read the following instructions:

> Thank you. That's all the time we're going to have for the interview. Now the rating procedure we'll be using is one you're probably somewhat familiar with, in that it is similar to one that Psych. 91 students filled out during the group testing session at the beginning of the semester. On that questionnaire, you were asked to rate some groups of three descriptive phrases, and to distribute 10 points among each set of phrases, according to how descriptive of you each one was.
>
> Today's procedure will be as follows: I will hand you one set of phrases at a time. As before, you will distribute 10 points among each set of three phrases, according to how descriptive of you each of the phrases is in comparison only to the other two in that triad. Give the most points to the phrases most descriptive of you, the least points to the least descriptive phrases. In other words (E_1 shows a sample set of phrases), beside each of these phrases, you can write any number from 0 through 10, as long as the three together add up to 10.
>
> While you're doing that, I'll be writing down the ratings that I think you're going to make on a master sheet I have here. As soon as I write down the ratings I think are true of you, I'll take the ratings you made, and record them next to my predictions. (pause)
>
> Now, from time to time, after I've recorded one of your responses to a triad, I'm going to ask you to elaborate on one of the three phrases in that triad. When I do that, I'd just like you to tell me a sentence or

> two about yourself in relation to the particular phrase that I ask about. The reason that each of the experimenters is asking for a certain number of these types of clarifications is that they can thereby find out a little more about what subjects had in mind about themselves while they were making certain ratings, and compare that with their thoughts while making the same ratings.

(The following three paragraphs were memorized by E_1, and said "spontaneously," in a more informal manner than the rest of the instructions:)

> Uh, before I go on with these instructions, I'd like to just add something briefly. A lot of subjects have asked whether I could tell them how well I'm predicting as we go along. In other words, they've wanted to know what I think of them. Unfortunately, that would be impossible, because as it is the experiment is fairly long, and it would make it much longer to go over all the agreements and disagreements on each triad.
>
> The reason I've brought this up, though, is that there is a way you'll be able to tell some of the times I've agreed with you. After most of your ratings, I'll just quickly hand you the next triad without saying anything, and you won't know whether I've agreed with you or not. However, on some of the triads I've agreed with you on, I'll ask for one of the elaborations, as was explained in the instructions. So remember, if I don't ask for an elaboration, you won't know whether I've agreed with you about yourself or not, but when I do ask, then you can be sure I've agreed with you. By the way, by "agree" I simply mean that the ratings I've predicted are quite close to the ones you've actually made. Have I made that clear?
>
> Now to get back to the instructions (E_1 began to read aloud again)--I'd like you to put down your initial impressions on these, that is, how you feel about yourself at the moment. Don't deliberate a great deal, and don't try to remember previous ratings you made. Also, please try to be as honest about yourself as possible. Do you have any questions before we begin? (If so, E_1 repeated appropriate parts of the instructions.) Good, then here's the first set.

The 72 triads of the SVT Test were arranged in 6 blocks of 12 triads each. The triads were handed to Ss one at a time. As mentioned previously, four blocks of triads were administered in this way by E_1, and two were given to Ss by E_2 at the end of the Generalization Session. The

scoring sheets on which Es recorded Ss' ratings are contained in Appendix F.

Using each S's group testing scores, his triads were rearranged prior to the Conditioning Session in such a way that his initial or base rate scores were equal on each of the trial blocks that he was presented. For example, if a given S had attained a SVT Test score of 120 during group testing, his triads were rearranged prior to conditioning in such a way that the six trial blocks would each have a total score of 20 points. In this way, deviations from Ss' base rate scores reflected differences between their original, group testing ratings, and the ratings they made during the conditioning procedure.

Reinforcement. Asking for elaborations of specific phrases was used as a social reinforcement because it was anticipated that doing so would (1) imply to S that E_1 was pleased by his set of ratings, not because of its content, but because E_1 had allegedly predicted it accurately; (2) provide informational feedback to S, in that he "knew" for sure only on the reinforced items that E_1 agreed with his rating; and (3) demonstrate E_1's personal interest in S. Subjects were asked to elaborate on the specific phrases which had elicited the reinforcement. To provide additional reinforcement for Ss' describing themselves in positive or negative terms, E_1 nodded after each of Ss' elaborations, and said, "I see," "O.K.," or "All right" after approximately half of the elaborations.

So as not to sound repetitive, E_1 asked for elaborations by means of

the following questions:

1. What were you thinking about yourself when you rated--
2. What did you have in mind about yourself when you rated--
3. Tell me a little more about yourself in relation to the phrase--
4. Did you have any particular kinds of situations in mind when you rated-- (If "no," What did you have in mind?)
5. Tell me a sentence or two about yourself in relation to--

The five questions were asked more or less in succession, with minor deviations according to their applicability to the phrases.

Half the Experimental Ss were reinforced (i.e., asked for elaborations) every other time they handed E_1 a triad on which they had assigned more points to the positive phrase than the mean number of points the particular S in question had assigned to positive phrases during the group administration of the SVT Test. The other half of the Experimental Ss were reinforced in the same way for an increase in their negative ratings. The reinforcement was given approximately three seconds after S handed back to E_1 the slip of paper with a set of triads on it.

Control Ss were reinforced as follows: Hi NFA Control Ss were matched with Hi NFA Experimental Ss, and Lo NFA Controls with Lo NFA Experimentals. Half the Ss in each Control Group were matched with Ss who had been reinforced on positive phrases and half were matched with Ss who had been reinforced on negative phrases. The purpose of this procedure was to insure that the mean number of reinforcements obtained by each of the Control Groups would be approximately equal to the mean

number of reinforcements obtained by each of the Experimental Groups with which it was to be compared. Each Control S was asked for an elaboration following those triads on which the Experimental S with which he was matched had been reinforced. The specific phrases which Control Ss were asked to elaborate on alternated between "positive" and "negative," with the first one being "positive" for half the Controls, and the first one being "negative" for the other half. Thus, there was no systematic relationship between the phrases Control Ss were asked about and their relative ratings of those phrases within the triads.

In order to eliminate a possible effect that the time of the semester might have had on Ss' responses, all six cells were filled at approximately an equal rate throughout the period in which the experiment was conducted.

In order to (1) maximize the likelihood that Ss would be unable to verbalize the reinforcement contengency, (2) make the situation more relaxed and natural for Ss and E_1, and (3) make the reinforcement less obtrusive, E_1 made the following comments, in a spontaneous and natural manner, at the end of the designated triads:

Triad 6: After the second nonreinforced triad following the sixth triad, E_1 shook his head and said in a disappointed tone of voice, "I hope I start predicting these better than I have been so far." Besides the purposes mentioned above, it was hoped that this would impart to Ss the feeling that E_1 was pleased when he asked for elaborations, since he was supposedly predicting accurately on those triads.

Triad 25: "We're a little over half through with these now."

Triad 42: "We're almost finished with these now."

After the last triad, E_1 handed a copy of the Validity Questionnaire (see Appendix G) to Ss and said:

> O.K., that finishes the rating procedure. Please put your name at the top of this sheet and fill these out now.

The purpose of this questionnaire was to compare Ss' feelings of honesty in self-disclosure on the group form of the SVT Test, the conditioning trial blocks of the SVT Test, and the trial blocks which Ss rated during the generalization procedure. It was also used to compare Hi and Lo NFA Ss on how honest they felt they had been in filling out the ratings.

Post-Conditioning Interview (see Appendix H). The purposes of this Interview were to determine whether Ss tended to (1) report changes in their self-ratings as compared to their previous ratings, (2) report associations they might have made between their responses and any of E_1's behavior, and (3) rate differentially their motivations to gain the three aspects of reinforcement (pleasing E_1, receiving personal attention, receiving feedback). An attempt was made to conduct the interview in such a way that it would not suggest to Ss that they might have changed their ratings, or that certain of E_1's behavior was contingent upon their having made certain ratings.

Prior to administering the Post-Conditioning Interview, E_1 said to S:

> O.K., now I'm going to ask you some questions about the general impression you feel you gave of yourself and about some of your reactions to the rating procedure.

Awareness manipulation. Following the Post-Conditioning Interview, all Ss with the exception of two-thirds of those Experimental Ss who reported having changed their ratings in the direction in which they were reinforced,[1] were told:

> Thank you. That ends the experiment. Do you have a card to be signed for experimental credit? (If S asked questions about the experiment, E_1 responded by repeating appropriate parts of the explanation given prior to the interview and conditioning procedure.)

One-third of the Aware of Change Ss were thus included with Ss who did not report having changed their ratings in the direction of the reinforcement. That is, they were led to believe that the true purpose of the experiment had already been explained to them. These Ss were designated as "Uninformed," as they were not given, nor did they report, any reason that they might have changed their ratings since the group testing session.

Of the remaining two-thirds of the Aware of Change Ss, one-third were assigned to an Informed Group, and one-third to an Informed-Control Group. The Informed Group, as mentioned earlier, were told the true purpose of the experiment, including the exact nature of the response-reinforcement relationship. This Group consisted in part of all the Ss who

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[1] It was recognized that investigation of the effects of the awareness manipulation would depend on the number of Ss reporting such change; it was hoped that the majority of Ss could be categorized as Aware of Change so that statistical analysis would be possible.

reported any relationship between their ratings and the reinforcement during the Post-Conditioning Interview.

If the Uninformed Group were to show generalization of changes in their self-ratings, awareness of the response-reinforcement relationship would not have been a mediating variable. If they were to show greater generalization effects than Ss unaware of changes in their self-ratings as well as unaware of the response-reinforcement relationship, then awareness of the difference in their self-presentation would have been a mediating variable. And finally, if the Uninformed Ss were to show greater generalization effects than Ss who were Aware of Change but verbalized, or were provided by E_1, with a reason extraneous to themselves for having changed (Informed Ss), then it could be argued that need for consistency of self-presentation would have been a mediating variable.

A control for the effects of the Informed Ss' learning that they had been deceived about the purpose of the experiment was provided by the Control-Informed Group. The Ss in this Group (the remaining one-third of the Aware of Change Ss) were given an alternative purpose of the experiment and a reason that they might have changed their ratings, as were the Informed Ss. However, they were given false information to the effect that their changes in self-presentation probably reflected changes which had taken place within them as a result of life events which intervened between group testing and conditioning. Any need for self-consistency which these Ss might have experienced would thereby not have been

allayed, and could not be invoked to account for differences between this Group and the Uninformed Group. Therefore, the Informed Ss (who were told that their changes in self-ratings had been experimentally induced) would have to manifest significantly less generalization effects than the Informed-Control Ss, as well as the Uninformed Ss, in order for need for consistency of self-presentation to be used as an explanation of the performance of the Uninformed Group.

Both the Informed and the Control-Informed Ss were told:

> O.K., thank you. That ends the experiment. Before you leave, I'd like to explain to you briefly what it was about.

They were then read the appropriate "explanation" of the experiment. The two sets of explanations are contained in Appendix I. Next, Ss were given credit for having participated in the experiment.

While signing Ss' cards for experimental credit, E_1 said ("spontaneously"):

> As you may recall, I offered subjects one and a half hours credit, and asked for a new subject every hour. The reason I did that is that I'm involved in another project with some people down the hall, and we're collecting some normative data on some various paper and pencil personality tests. If you could stay for another 20 or 30 minutes, you'd sure be doing us a favor, because we need to get as many people as we can to fill out these tests; and at the same time, you could get the other half hour credit you signed up for.

If S agreed to stay, he was thanked and directed to E_2,[1] who was in

---

[1] Unfortunately, E_2 found shortly after the start of the experiment that she would be unable to put in all the hours required. However, she was able to run half the Ss in each cell, and a second E_2 (also an attractive female psychology major in her senior year of college) ran the other half. Neither E_2 knew whether the Ss they ran were Hi or Lo in NFA, or which experimental conditions they had encountered.

a room at the other end of the building. He was told to tell E_2 that Mr. Stein had sent him down "to fill out the personality questionnaires." If S chose to leave, the experiment was explained to him, and he was asked not to discuss it with his classmates.

The Generalization Session. The instructions used by E_2 during the Generalization Session are contained in Appendix J. The measures used during the Generalization Session were described earlier. They included (1) Trait Questionnaire, (2) Personality Questionnaire, (3) SVT Test: Trial Blocks 5 and 6, (4) Validity Questionnaire, and (5) Post-Generalization Questionnaire.

The purposes of the Post-Generalization Questionnaire (see Appendix K) were to (1) determine whether Ss reported changing their ratings from those they had made during the Conditioning Session; (2) get their opinions of why they changed in the reported direction; (3) determine whether Ss tended to feel they presented a more valid picture of themselves to E_1 or E_2 and why; and (4) determine whether Ss believed they were no longer in the same experiment.

When Ss completed the Post-Generalization Questionnaire, the experiment was explained to them, they were asked not to discuss it with their classmates, and they were given additional experimental credit.

Chapter III

RESULTS

Conditioning Findings, SVT Test

The mean ratings of each of the Experimental and Control Groups on the six trial blocks of the SVT Test are presented in Appendix L, Table 10a. The data appear graphically in Figs. 1 and 2.

Bartlett's test for homogeneity of variance was performed on the conditioning data, and significant X^2's of 9.62 (df = 3; $p < .05$) and 11.47 (df = 3; $p < .01$) were found on groups reinforced for positive and negative phrases, respectively. In order to reduce the heterogeneity of variance and insure normality of distribution, the data were converted to logarithms. All findings reported on SVT Test scores during conditioning and generalization are based on these logarithmically converted scores.

Changes in positivity ratings. The first experimental hypothesis stated that systematically reinforced Experimental Ss would exhibit more learning effects than randomly reinforced Control Ss. The second

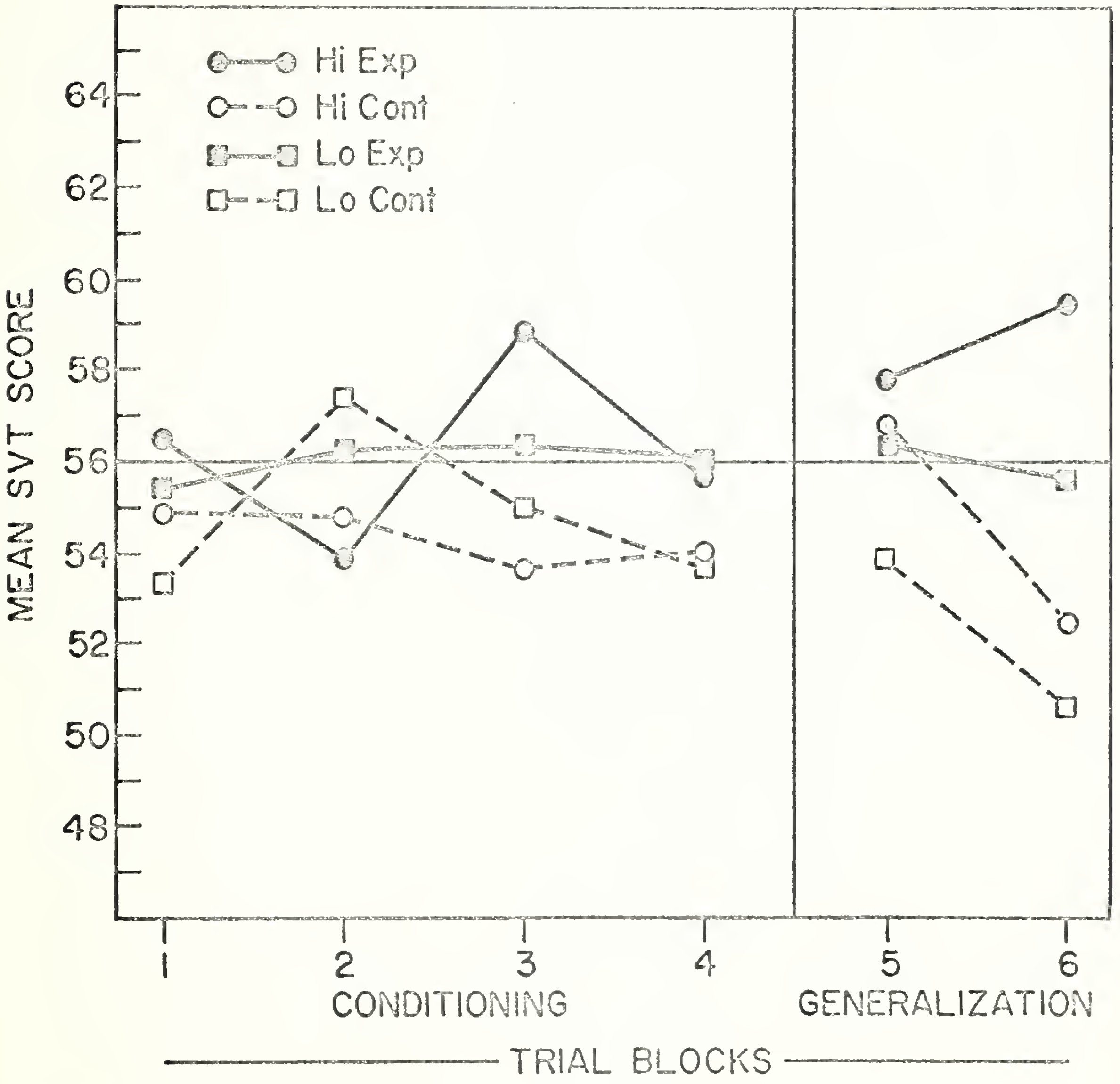


Fig. 1. Mean SVT Scores of Hi and Lo NFA Ss Reinforced on Positive or Random Phrases During Conditioning Blocks. Scores are Adjusted to the Group Mean Score of 56.00.

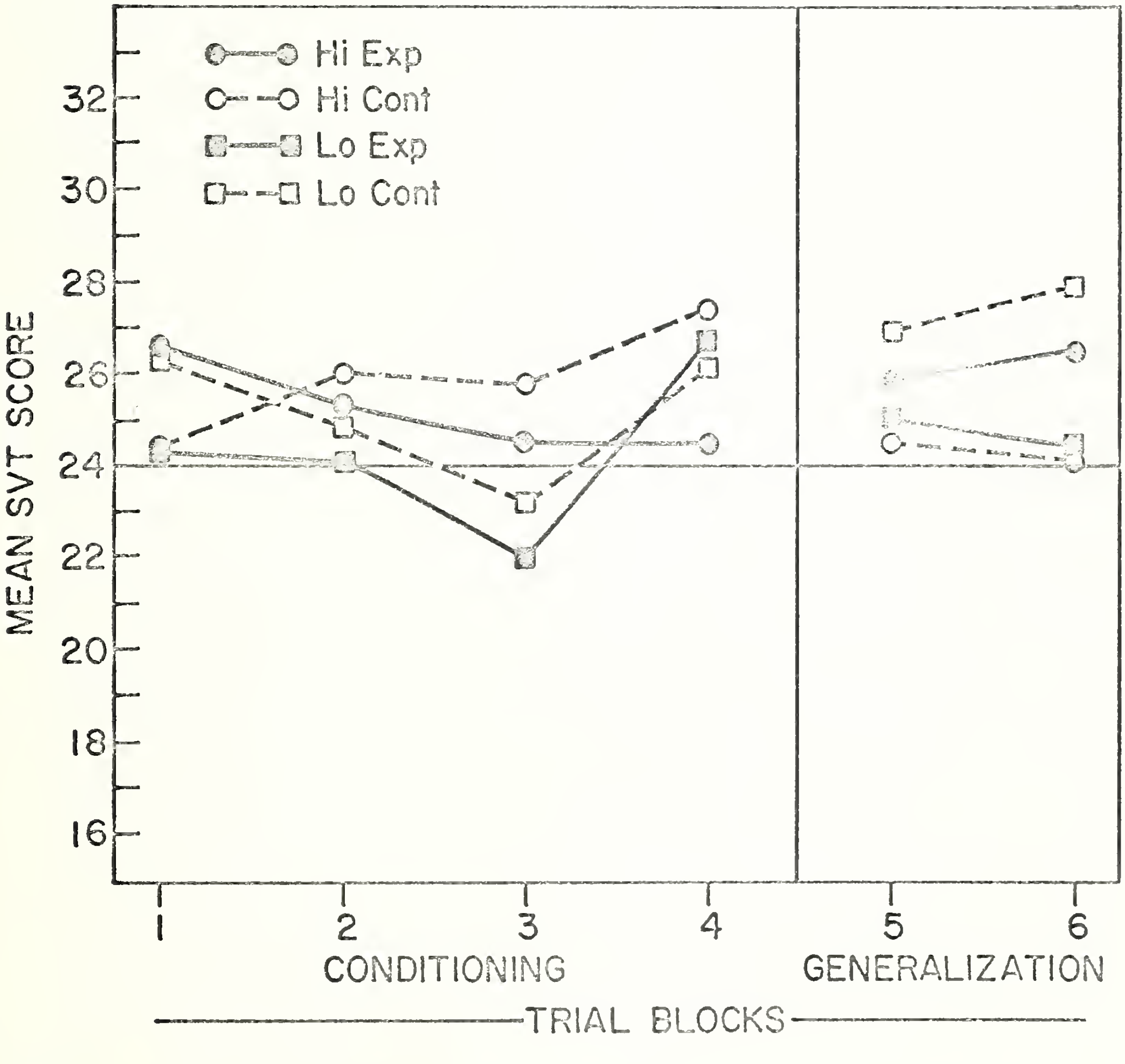


Fig. 2. Mean SVT Scores of Hi and Lo NFA Ss Reinforced on Negative or Random Phrases During Conditioning Blocks. Scores are Adjusted to the Group Mean Score of 24.00.

hypothesis stated that Hi NFA Ss would show more learning effects than Lo NFA Ss. In order to test these hypotheses, a three factor (NFA, type of phrase reinforced, and trial blocks) analysis of variance, with repeated measures on one factor (trial blocks), was performed. An unweighted means solution was employed in this analysis, and in all subsequent analyses in which it was necessary to adjust for unequal cell sizes. In order to insure that each of the Experimental Groups did not differ significantly from the Control Group with which it was to be compared on the mean number of reinforcements received, t tests were performed. Inspection indicated that the Groups received approximately equal numbers of reinforcements, and none of the t's were found to be significant (see Appendix M).

The results of the three factor analysis may be found in Appendix N, Table 11. The analysis yielded a reinforcement effect which approached but did not quite attain statistical significance ($F = 2.91$; $df = 1, 52$; $p < .10$). As may be seen in Fig. 1, Experimental Ss tended to perform at a rate higher than that of randomly reinforced Control Ss. The analysis indicated that there were no significant differences (1) across trial blocks ($F < 1.00$), or (2) between Hi and Lo NFA Ss ($F < 1.00$). Thus, the results of the analysis on Ss' ratings of positive phrases show a trend toward confirmation of the first hypothesis, but do not provide confirmation of the second hypothesis.

Changes in negativity ratings. A similar three factor analysis of

variance was performed on Ss' ratings of negative phrases (see Appendix N, Table 12). In this case, the performance of the Experimental Ss was not found to differ significantly from that of the Control Ss ($F < 1.00$). However, the analysis did yield a significant trial blocks effect ($F = 2.99$; $df = 3, 156$; $p < .05$). In order to investigate further the meaning of this finding, separate trend analyses were performed on the four groups of Ss included in this analysis. The results of these analyses may be found in Appendix N, Tables 13-16. Analysis of the Lo NFA Experimental Ss yielded a significant trial blocks effect ($F = 4.32$; $df = 3, 51$; $p < .01$) and significant quadratic ($F = 4.57$; $df = 1, 51$; $p < .05$) and cubic ($F = 5.77$; $df = 1, 51$; $p < .01$) trends. These Ss tended to (1) decrease their mean ratings of negative phrases from the first to the second trial block, (2) decrease these ratings even more sharply from the second to the third trial block, and (3) show a sharp increase in their ratings of negative phrases in the last quarter of the conditioning blocks. As may be further noted on Fig. 2, page 39, the Lo NFA Control Ss exhibited a similar, though not significant tendency first to decrease, then to increase, their ratings of negative phrases ($F = 2.11$; $df = 3, 27$; $p < .10$). Finally, no significant differences were found between the ratings of Hi and Lo NFA Ss ($F < 1.00$).

As will be recalled, the first experimental hypothesis did not apply to Ss' ratings of negative phrases. However, the available findings are quite consistent with other experimental predictions: Lo NFA Ss

reinforced on negative phrases showed a significant increment in performance from the third to the fourth trial block, while Hi NFA Ss who were reinforced for increasing their ratings of negative phrases did not.

Generalization Findings, SVT Test

Changes in positivity ratings. A three factor (NFA, type of phrase reinforced, and trial blocks) analysis of variance on the generalization data of Ss who had been reinforced on positive phrases (see Appendix N, Table 17) yielded a reinforcement effect which approached, but did not quite attain statistical significance ($F = 3.82$; df = 1, 44; $p < .10$). The Experimental Ss, who had been systematically reinforced for increasing their ratings of positive phrases, continued to perform at a higher rate than that of the randomly reinforced Control Ss on the non-reinforced generalization blocks (see Fig. 1, page 38). The same analysis also yielded a significant reinforcement x trial blocks interaction effect ($F = 6.17$; df = 1, 44; $p < .025$). This result reflects a tendency of the randomly reinforced Control Ss to rate themselves increasingly less positively than the Experimental Ss across the generalization trial blocks (see Fig. 1, page 38). Again, NFA differences were not found to be significant ($F < 1.00$).

Changes in negativity ratings. A similar three factor analysis of

variance was performed on the generalization data of all Ss who had been reinforced on negative phrases (see Appendix N, Table 18). The analysis yielded no significant findings.

The Roles of Awareness and Motivation

Awareness. Upon completion of the foregoing analyses, there appeared to be relatively little clearcut evidence of learning. It was therefore decided to investigate next whether or not Ss tended to be "aware" of the response-reinforcement relationship, since it has been argued that this type of "awareness" is necessary in order for learning to occur (Spielberger, 1962).

Question 8 of the Post-Conditioning Interview (PCI) asked Ss whether they had thought of any connections between the numbers they wrote down on each triad and E_1's asking for elaborations. Question 9 asked Ss whether they had noticed anything in common about the phrases they were asked for elaborations on. If, in either case, a S responded affirmatively, he was asked when he had first thought of his response.

In this experiment, Ss were defined as "aware" of the response-reinforcement relationship if they (1) answered both Questions 8 and 9 affirmatively, and (2) indicated that they had thought of the relationship during the conditioning procedure. An affirmative response to Question 8

without an accompanying affirmative response to Question 9 was not considered sufficient to categorize Ss as "aware," because Ss responding in this way would not have known which of the three phrases would be reinforced if assigned a high number. Furthermore, these Ss made no indications that they were cognizant of the evaluative differences between the three phrases within each triad. Similarly, an affirmative response to Question 9 without an accompanying affirmative response to Question 8 was not considered sufficient to categorize Ss as "aware." Subjects responding in this way would not have known after which triads evaluatively positive (or negative) phrases would be reinforced, since they did not appear to be cognizant of any relationship between the reinforcement and the numbers they assigned the phrases.

The number of Ss in each Group who responded affirmatively to Question 8, Question 9, and to both Questions 8 and 9 is reported in Table 3. Clearly, most of the Ss did not respond affirmatively to either question. Furthermore, only 6 of the 92 Ss in the experiment could be categorized as "aware" by the definition given above.

Table 3 also indicates that there was virtually no difference between the proportion of affirmative to negative responses given by Hi and Lo NFA Ss. There did, however, appear to be a tendency for Ss who had been reinforced on positive phrases to give more affirmative responses than Ss who had been reinforced randomly or on negative phrases. Separate X^2 analyses on Question 8, Question 9, and on the two questions combined

Table 3

Number of Ss in Each Group Who Answered Affirmatively on Questions 8 and 9 of the Post-Conditioning Interview

NFA	Type of Phrase Reinforced	N	Question 8		Question 9		Questions 8 and 9	
			yes[a]	no[b]	yes	no[b]	yes[a]	no[b]
Hi	Pos.	18	10	8	4	14	3	15
	Neg.	18	0	18	0	18	0	18
	Rand.	10	1	9	1	9	0	10
Lo	Pos.	18	9	9	5	13	3	15
	Neg.	18	0	18	0	18	0	18
	Rand.	10	1	9	0	10	0	10
Totals		92	21	71	10	82	6	86

a. Thought of during conditioning.

b. No alternatives, or thought of during Post-Conditioning Interview.

were therefore performed. Analysis of Question 8 indicated that Ss who had been reinforced on positive phrases reported significantly more frequently that they had noticed a connection between the numbers they had assigned to phrases and E_1's asking for elaborations($X^2 = 18.78$; df = 2; $p < .001$). These connections were either that E_1 asked for elaborations (1) on phrases with high numbers, or (2) after triads with a large spread between the ratings. Analysis of the differences between the proportion of Ss in each Group who responded affirmatively to Question 9 did not quite attain statistical significance ($X^2 = 5.71$; df = 2; $p < .10$). The X^2 analysis on the proportion of Ss in each Group responding affirmatively to both Questions 8 and 9 also did not indicate the presence of any statistically significant differences ($X^2 = 2.91$; df = 2; $p > .10$) between these proportions.

The reason that a significantly higher proportion of Ss who had been reinforced on positive phrases were conscious of the relationship between the numbers they assigned the phrases and E_1's asking for elaborations may relate to a general tendency on the part of most Ss to assign the highest number in a triad to the positive phrase. Thus, in order to gain reinforcement, the Ss who were reinforced for increasing their ratings of positive phrases may often have had to rate the critical phrase with a number clearly higher than that assigned to the other two phrases. This was obviously not true of the randomly reinforced Ss, for whom there was no relationship between their numbers and the reinforcements. It was

also not true of Ss reinforced for increases in their ratings of negative phrases, since, in this Group, any given S's reinforced rating rarely substantially exceeded the rating he assigned to the positive phrase on the same triad.

It seemed possible that some of the Ss who had been reinforced on positive phrases, and who were conscious of the connection between high ratings and reinforcement, but not of the kinds of phrases they were being asked to elaborate on, decided to elicit reinforcements by simply increasing their ratings of those phrases which they would have rated highest anyway. Thus, it could be argued that some of the Ss who responded affirmatively to Question 8, but not to Question 9, may have employed "partially correct hypotheses" (Stein, 1966), in that implementation of the decision outlined above would have raised the probability of their making reinforceable ratings. The possibility of Ss' operating in this way was investigated by an analysis of their responses to Questions 4, 6c, and 10 of the PCI.

Question 4 of the PCI asked:

> Did you think of any ideas about what the purpose of the rating procedure might have been other than its stated purpose to see how well I could predict your ratings?

Subjects who offered alternative explanations were then asked "When did these ideas first occur to you?"

Table 4 presents the number of Ss in each Group who reported having thought of alternative explanations of the experiment. As can be readily

Table 4

Number of Ss in Each Group Who Reported Alternative Explanations of the Experiment on Question 4 of Post-Conditioning Interview

NFA	Type of Phrase Reinforced	N	Yes[a]	No[b]
	Pos.	18	7	11
Hi	Neg.	18	2	16
	Rand.	10	1	9
	Pos.	18	7	11
Lo	Neg.	18	2	16
	Rand.	10	1	9
Totals		92	20	72

a. Thought of during conditioning.

b. No alternatives, or thought of during Post-Conditioning Interview.

seen, there were no differences in such reporting as a function of need for approval. However, a X^2 analysis indicated that Ss who were reinforced for increasing their ratings of positive phrases reported having thought of a significantly higher proportion of alternative explanations of the experiment during the course of the conditioning procedure than either Ss reinforced on negative phrases or Ss reinforced randomly ($X^2 = 10.22$; df = 2; $p < .01$). Inspection of the content of these explanations revealed that only two Ss (both positively reinforced) offered alternative explanations which suggested in any way that E_1 was trying to influence their self-ratings. Close to half of the remaining explanations hypothesized that E_1 would be comparing Ss' scores on the rating procedure with those they had attained during the Group Testing Session. No other alternatives were offered more than twice each. Although a total of 20 out of 92 Ss (22%) reported having thought of one or more alternative explanations during the Conditioning Session, the nature of these explanations was not such that Ss could be described as having been "aware" of any relationship between their responses and the reinforcement.

In Question 6c of the PCI, E_1 asked Ss, "Did you in any way try to get me to ask you for elaborations?" None of the Ss in the experiment answered this question in the affirmative.

Question 10 of the PCI asked:

> Do you feel that anything I said or did might have influenced in any way the number of points you assigned to any of the phrases?

If S responded affirmatively, he was asked when he had first thought of the

idea.

No Ss expressed certainty that they had been influenced. A total of six Ss felt that they might possibly have been influenced, and only four of these (all reinforced on positive phrases--two Hi NFA and two Lo NFA) reported having thought of this possibility prior to being asked about it. Of these four, two reported having been possibly influenced in a direction opposite to that in which they had been reinforced. One of these was one of the two Ss who had reported the possibility of an influence attempt in response to Question 4. The remaining two Ss who felt they might have been influenced answered Question 8 affirmatively. One of them also answered Question 9 affirmatively.

Thus, the evidence for concluding that Ss tended to be "unaware" of the response-reinforcement relationship was strong: Even those Ss who may possibly have tended to employ "partially correct hypotheses" would have done so without having been aware that (1) E_1 asked for elaborations following their having made high ratings on evaluatively positive (or negative) phrases, (2) E_1 was succeeding in, or even attempting to influence their ratings, or (3) that they might have been attempting to gain reinforcements by altering their ratings in some way.

Motivation to gain reinforcement. Before attributing the relatively few conditioning findings to Ss' lack of "awareness," it was deemed advisable to investigate the role of Ss' reported motivation to gain reinforcement. Reinforcement has been defined (e.g., by Skinner, 1938) as

any stimulus in an organism's environment which raises the probability of the emission of some response by that organism. By that definition, "asking for elaborations" did not serve as a very effective reinforcement in the present study. However, the position was taken that the effectiveness of the reinforcement clearly varied between Ss, and that Ss' varying levels of motivation to gain reinforcement could be assessed by means of certain of their responses on the PCI.

Questions 5b, 6b, and 7b of the PCI were designed to assess Ss' motivations to gain the three aspects of reinforcement which it was felt would be operating within the context of the Conditioning Session (pleasing E_1, gaining his interest, and obtaining feedback). The questions were as follows:

> 5 (b) How much did it matter to you whether I was pleased by your ratings?
>
> 6 (b) How much did you want me to ask you to elaborate on items?
>
> 7 (b) How much did you want to know whether my ratings agreed with yours?

The Ss rated each of the questions on a four point scale ranging from "Not at All" to "A Great Deal."

The mean ratings of each Group of Ss on each of the three questions are presented in Table 5. A three factor analysis of variance was performed on these ratings in order to test for possible differences between (1) Hi and Lo NFA Ss; (2) Ss who were reinforced for positive phrases, negative phrases, or on a random basis; and (3) Ss' ratings of the three

Table 5

Subjects' Mean Ratings on Questions 5b, 6b, and 7b of the Post-Conditioning Interview (Ratings Made on a Four-Point Scale)

NFA	Type of Phrase Reinforced	Questions 5	6	7	
Hi	Pos.	1.72	2.11	2.50	
	Neg.	1.39	2.06	2.28	
	Rand.	1.70	2.00	2.00	
Mean of all Hi NFA Ss		1.59	2.07	2.30	
Lo	Pos.	1.72	2.28	2.67	
	Neg.	1.67	2.22	3.00	
	Rand.	1.30	1.80	2.40	
Mean of all Lo NFA Ss		1.61	2.15	2.74	
Mean of all Ss		1.60	2.11	2.52	Grand mean = 2.08

questions. The results of this analysis are reported in Appendix N, Table 19. No significant differences were found between Hi and Lo NFA Ss ($F = 1.04$; $df = 1, 50$; $p > .10$) or between the types of phrases reinforced ($F = 1.66$; $df = 2, 50$; $p > .10$). However, a highly significant difference was found between Ss' ratings of the three questions ($F = 35.78$; $df = 2, 100$; $p < .001$). In order to investigate further the differences between Ss' responses to the three questions, t tests for correlated observations were performed (Winer, 1962). The results of these t tests indicated that Ss' ratings of Question 7 were significantly higher than their ratings of Question 6 ($t = 9.98$; $df = 91$, $p < .001$), and that their ratings of Question 6 were significantly higher than their ratings of Question 5 ($t = 8.66$; $df = 91$; $p < .001$). Subjects reported having been most highly motivated to receive feedback, moderately motivated to be asked for elaborations, and least motivated to please E_1. Further inspection of Ss' ratings of Question 5b (i.e., how motivated they reported having felt to please E_1) revealed that approximately half the Ss in the experiment (44 out of 92) rated the question "Not at All." Of the remaining 48 Ss, 41 rated the question "Somewhat," 7 rated it "Quite a Bit," and none rated it "A Great Deal."

Some further interesting findings relating to Ss' reactions to the reinforcement were the percentages of Ss who reported having been cognizant of those aspects of the reinforcement procedures which the author assumed would be reinforcing (see Table 6). Prior to being

Table 6

Percentage of Ss in Each Group Who Responded to the Three Aspects of Reinforcement (Measured by Questions 5a, 6a, and 7a of the Post-Experimental Interview)

NFA	Type of Phrase Reinforced	% Who Felt E_1 Was Pleased (Q. 5a)	% Who Felt E_1 Took a Personal Interest in Them (Q. 6a)	% Who Remembered the Nature of the Feedback (Q. 7a)
Hi	Pos.	55.56%	11.11%	83.33%
	Neg.	50.00%	11.11%	66.67%
	Rand.	50.00%	20.00%	70.00%
% of all Hi NFA Ss		52.17%	17.39%	73.91%
Lo	Pos.	61.11%	22.22%	77.78%
	Neg.	72.22%	38.89%	94.44%
	Rand.	60.00%	20.00%	90.00%
% of all Lo NFA Ss		63.83%	28.26%	86.96%
% of all Ss		59.89%	20.65%	80.13%

asked how important it was to them that E_1 was pleased by their ratings (Question 5b of the PCI), Ss were asked Question 5a of the Interview, which was,

> Did you get the feeling that it pleased me when I was able to accurately predict your ratings?

In response to this question, 59.9% of the Ss answered affirmatively.

Prior to being asked how much they wanted to be asked for elaborations (Question 6b), Ss were asked Question 6a:

> Did you have the feeling when I asked you to elaborate on some of the items that I was interested in you as a person, rather than simply as an experimental subject?

It was anticipated that Ss' motivations to be asked for elaborations would derive in part from a feeling that E_1 was showing personal interest in them when he asked for the elaborations. However, only 20.7% of the Ss responded affirmatively to this question. Apparently, Ss' motivation to be asked for elaborations was based on more than a desire for E_1 to show interest in them, since they did not tend to think he was doing so. In retrospect, this finding is not surprising, since (1) Ss were told that the purpose of the experiment was to develop an interview, and (2) Ss from the Psychology 91 course tend to be wary of being manipulated.

The results of the analyses of Questions 7a and 7b suggest that Ss may have been motivated for reinforcement primarily for its informational feedback value to them; i.e., they apparently wanted to know what E_1 thought of them. Question 7a asked:

> While you were rating the triads, did you remember that I was asking for elaborations only after some of the triads I agreed with

> you on and that those were the only triads you could be sure I had agreed with you on?

In response to this question, 80.1% of the Ss answered affirmatively, and as will be recalled, Ss had a strong tendency to rate their motivation to find out whether E_1 was agreeing with them (Question 7b) as: (1) higher than their motivation to be asked for elaborations, and (2) much higher than their motivation to please him.

Since Ss' ratings of their motivation to gain reinforcement were generally quite low (especially on Question 1), and since a number of previous experimenters (e.g., Bryan and Lichtenstein, 1966; Doherty and Walker, 1966) have demonstrated that experimental findings could be better understood by taking into account variations in Ss' reported motivation to gain reinforcement, it was decided to re-analyze the conditioning and generalization data excluding Ss with low motivation (Lo Mot Ss). The expectation was that by analyzing the data of only those Ss with high motivation to gain reinforcement (Hi Mot Ss), and thereby possibly eliminating the dampening effects of the Lo Mot Ss, more evidence of learning might appear.

In determining a method for categorizing Ss as Hi or Lo Mot, it was decided first not to consider Ss' ratings of Question 5 because of their having assigned such low ratings to it. (As may be recalled, about half the Ss rated this question "Not at All," and the distribution of the ratings was very highly skewed towards the low end.) Ratings on Questions 6 and 7 were not summed because the correlation of .35 ($p < .01$) which was

found between these questions fails to account for a fairly high proportion of the variance of each of them, suggesting that to some extent they measured different phenomena. It was therefore decided to label as "Lo Mot" all Ss who rated either Question 6, or Question 7, or both, "Not at All." "Hi Mot" Ss, then, were those Ss who reported at least some motivation (1) to be asked for elaborations, and (2) to find out whether or not E_1 agreed with their self-ratings.

Tables 7a and 7b present the number of Ss in each Group who were categorized as Hi and Lo Mot by the use of the definitions outlined above. It should be noted that approximately an equal number of Lo Mot Ss was dropped from each Group. Also, in order to insure that dropping out unmatched Ss from the Experimental and Control Groups did not result in significant differences between the mean number of reinforcements received by Ss, t tests were performed. The findings indicated that Ss in each of the Control Groups still received approximately the same number of reinforcements as the Ss in the Experimental Group with which they were matched: None of the t's were found to be significant (see Appendix M).

The next two sections of this chapter will present the conditioning and generalization findings of Hi Mot Ss.

Table 7a

Number of Hi Mot and Lo Mot Ss in Each Group (Conditioning)

NFA	Type of Phrase Reinforced	Hi Mot	Lo Mot	Total N
Hi	Pos.	14	4	18
	Neg.	15	3	18
	Rand.	7	3	10
Lo	Pos.	16	2	18
	Neg.	17	1	18
	Rand.	7	3	10
Totals		76	16	42

Table 7b

Number of Hi Mot and Lo Mot Ss in Each Group (Generalization)

NFA	Type of Phrase Reinforced	Hi Mot	Lo Mot	Total N[a]
Hi	Pos.	12	4	16
	Neg.	14	3	17
	Rand.	6	2	8
Lo	Pos.	13	2	15
	Neg.	15	1	16
	Rand.	7	2	9
Totals		67	14	81

a. The N's during the Generalization Session were somewhat smaller than during the Conditioning Session because of the absence of 11 Ss who chose to leave when given the option following the Conditioning Session.

Conditioning Findings, SVT Test: Hi Mot Ss

Changes in positivity ratings. A three factor (NFA, reinforcement, and trial blocks) analysis of variance, with repeated measures on one factor (trial blocks), was performed on the conditioning data of Hi Mot Ss who were reinforced on positive phrases. The analysis (see Appendix N, Table 20) yielded a significant reinforcement effect ($F = 6.16$; $df = 1, 40$; $p < .025$). Thus, when Lo Mot Ss were excluded from the analysis, the tendency for Experimental Ss to perform at a higher rate than Control Ss reached statistical significance (see Fig. 3).

The analysis also yielded a significant NFA x trial blocks interaction effect ($F = 2.75$; $df = 3, 120$; $p < .05$). In order to further investigate the meaning of this finding, separate trend analyses were performed on the four groups of Ss included in this analysis. The results of these trend analyses may be found in Appendix N, Tables 21-24. Analysis of the Lo NFA Control Ss yielded a trial blocks effect which approaches statistical significance ($F = 3.13$; $df = 3, 18$; $p < .10$). None of the other trend effects approached significance. Examination of Fig. 3 suggests that these Lo NFA Control Ss show a rather marked increment in their ratings of positive phrases from the first to the second trial block, then a steep decline during the last half of the Conditioning Session. Lo NFA

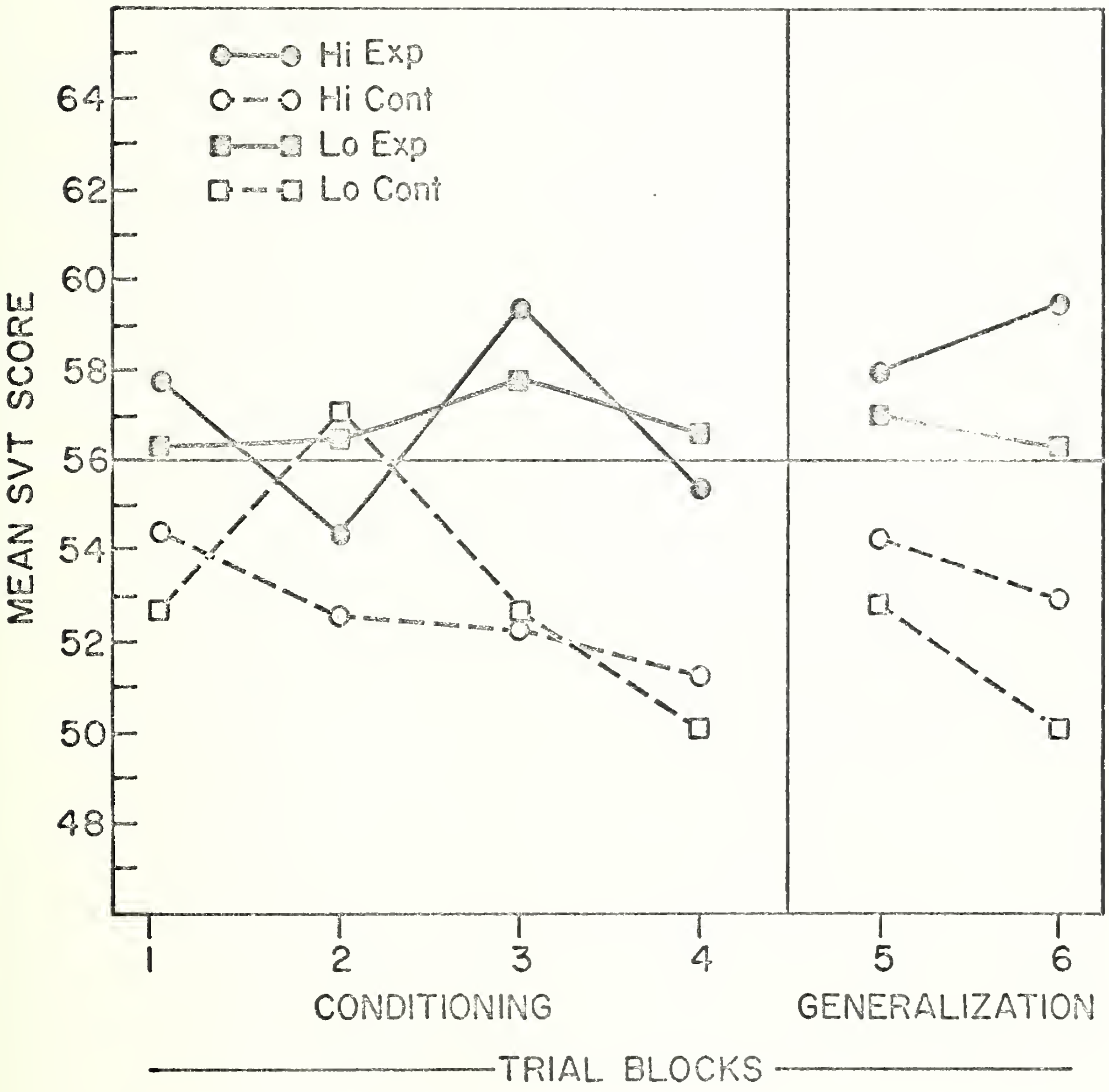


Fig. 3. Mean SVT Scores of Hi Mot Hi NFA Ss and Hi Mot Lo NFA Ss Reinforced on Positive or Random Phrases During Conditioning Blocks. Scores are Adjusted to the Group Mean Score of 56.00.

Experimental Ss also show an increase from the first to the second trial block, albeit a very slight one. Hi NFA Experimentals and Hi NFA Controls, on the other hand, both show rather marked declines from the first to the second trial blocks in their ratings of positive phrases.

Finally, the three factor analysis of variance on the positivity ratings of Hi Mot Ss yielded a significant reinforcement x trial blocks interaction effect (F = 3.51; df = 3, 120; $p < .025$). This finding appears to reflect a tendency for Experimental Ss to maintain their response rate throughout the conditioning procedure, whereas Control Ss exhibit a marked decline in their performance during the latter half of the conditioning procedure.

Changes in negativity ratings (see Fig. 4). A similar three factor analysis on the performance of Hi Mot Ss reinforced on negative phrases during the Conditioning Session (see Appendix N, Table 25) yielded: (1) a significant trial blocks effect (F = 4.62; df = 3, 126; $p < .005$), (2) a significant NFA x trial blocks interaction effect (F = 3.05; df = 3, 126; $p < .05$), and (3) a significant reinforcement x NFA x trial blocks interaction effect (F = 5.55; df = 3, 126; $p < .005$). In order to investigate further the meaning of these findings, several sub-analyses were performed. First, separate two factor (reinforcement and trial blocks) analyses were performed on Hi and Lo NFA Ss in order to test the significance of the differences between Experimental and Control Ss within each group. Next, separate two factor (NFA and trial blocks) analyses were performed

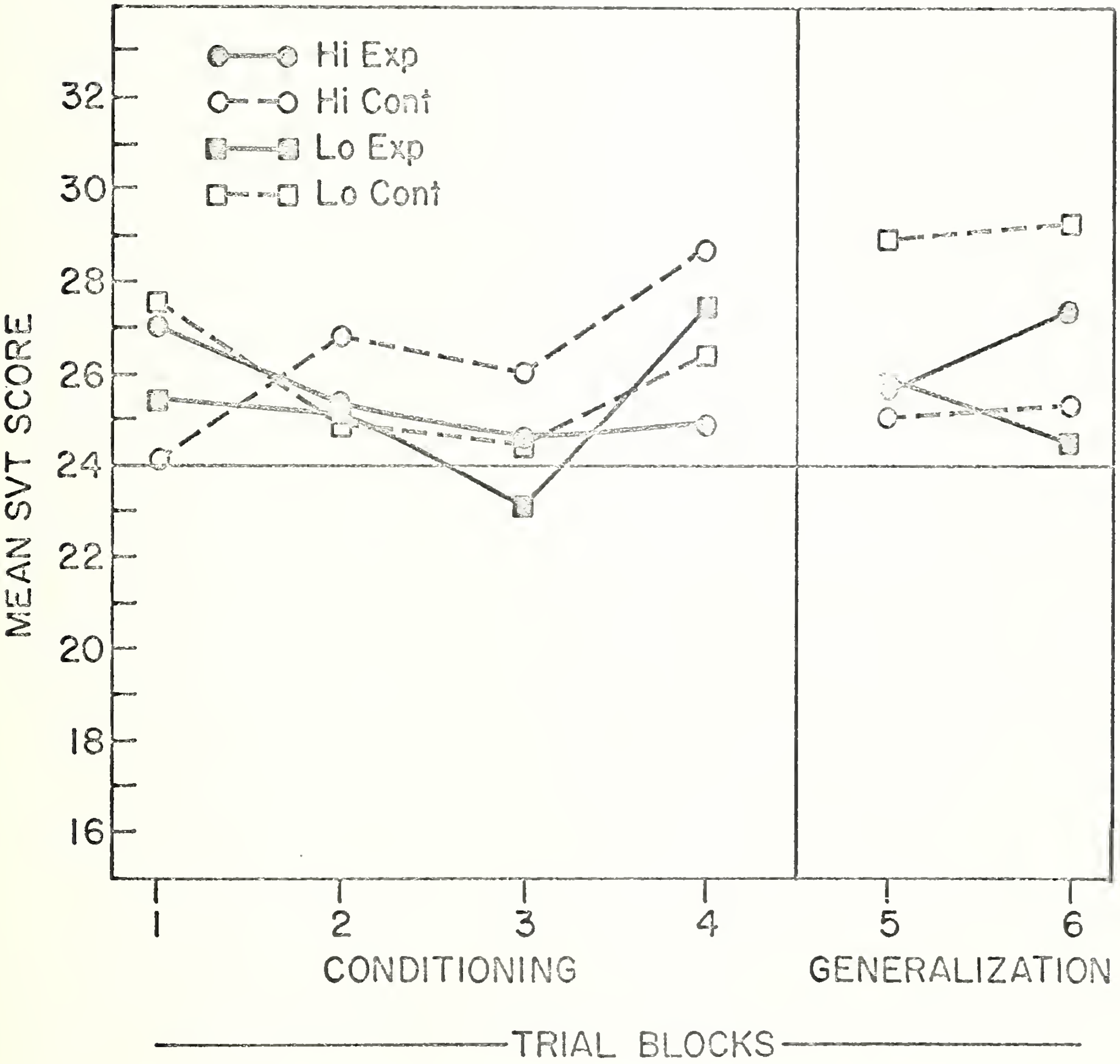


Fig. 4. Mean SVT Scores of Hi Mot Hi NFA Ss and Hi Mot Lo NFA Ss Reinforced on Negative or Random Phrases During Conditioning Blocks. Scores are Adjusted to the Group Mean Score of 24.00.

on the Experimental and Control Ss in order to test the significance of the differences between Hi and Lo NFA Ss within each group. The results of these analyses are summarized in Appendix N, Tables 26-29.

Reinforcement effects. Within the Hi NFA Group, a significant trial blocks effect ($F = 3.84$; $df = 3, 60$; $p < .025$) and a significant reinforcement x trial blocks interaction effect ($F = 5.36$; $df = 3, 60$; $p < .005$) were found. Hi NFA Control Ss markedly increased their ratings of negative phrases, while Hi NFA Experimental Ss, who were systematically reinforced for increasing their ratings of negative phrases, showed an initial tendency to rate negative phrases higher than the Controls, then to decrease their ratings of these phrases.

The two factor analysis on Lo NFA Ss yielded no significant results. However, the trial blocks effect approaches statistical significance ($F = 2.27$; $df = 3, 66$; $p < .10$). These Ss tended to decrease their ratings of negative phrases through the third trial block, after which they substantially increased them, as did those Ss in all but the Hi NFA Experimental Group.

NFA effects. The two factor analysis on Experimental Ss reinforced on negative phrases yielded no significant differences between Hi and Lo NFA Ss. However, the analysis yielded a trial blocks effect which approached, but did not quite attain, statistical significance ($F = 2.44$; $df = 3, 90$; $p < .10$). Hi and Lo NFA Experimental Ss tended to decrease their ratings of negative phrases until the third trial block, and then to

increase their performance on the last trial block.

Analysis of the Control Ss yielded a NFA x trial blocks interaction effect which also fell just short of statistical significance ($F = 2.47$; $df = 3, 36$; $p < .10$). Hi NFA Control Ss tended to increase their ratings of negative phrases during the conditioning procedure, whereas Lo NFA Control Ss performed at a higher level during the first trial block, decreased their ratings over the second and third trial blocks, then increased their ratings on the last trial block. The performance of all but the Hi NFA Control Group followed a similar overall pattern (see Fig. 4, page 61).

Generalization Findings, SVT Test: Hi Mot Ss

Eliminating Lo Mot Ss from analysis of the generalization data resulted in rather markedly decreased Group sizes (see Table 7b, page 57). This is because these N's had already been reduced as a result of the 11 Ss who chose to leave the experiment when given the choice after the Conditioning Session. As a case in point, the Hi NFA Control Group was reduced from 10 to 6 Ss. It was recognized that these reductions would result in a decrease in the power of statistical tests and thereby render non-significant results more likely. Nonetheless, the data were analyzed, and the results are reported below.

Changes in positivity ratings. A three factor (NFA, reinforcement, and trial blocks) analysis of variance with repeated measures on one factor (trial blocks) was performed on Hi Mot Ss' positivity ratings on Trial Blocks 5 and 6 (see Appendix N, Table 30). In similar fashion to the same analysis with Lo Mot Ss included, the results indicated a tendency for Experimental Ss to perform at a higher rate than Control Ss. However, this tendency did not quite attain statistical significance when Lo Mot Ss were excluded from the analysis ($F = 3.87$; $df = 1, 34$; $p < .10$). As mentioned above, this finding may be a result of the low N's in the Groups compared in the analysis.

Changes in negativity ratings. A similar three factor analysis on Hi Mot Ss' negativity ratings during the Generalization Session (see Appendix N, Table 31) yielded no significant results.

Other Generalization Measures

Trait Questionnaire. In order to control for variations in initial group testing scores, the data on Ss' Trait Questionnaire scores were analyzed by means of a two factor (NFA and type of phrase reinforced) analysis of covariance (Winer, 1962) (see Appendix N, Table 32). It will be recalled that scores on this Questionnaire were obtained by correlating each Ss' self-ratings with his ideal self ratings. The individual r's were

converted to z' scores for the purpose of statistical analysis. The mean r's obtained by each of the Groups appear in Tables 8a and 8b. It was not found necessary to add a constant to the r's prior to their conversion, because none of them were negative in value.

The analysis yielded no significant results when both Hi and Lo Mot Ss were considered. The analysis was repeated with Lo Mot Ss excluded (see Appendix N, Table 33), and yielded significant differences between Hi and Lo NFA Groups ($F = 8.87$; $df = 1, 56$; $p < .005$) and between Groups who had received reinforcement on positive, negative, and random phrases ($F = 4.20$; $df = 2, 56$; $p < .05$).

In order to better understand the meaning of these findings, a procedure suggested by Winer (1962) was employed to adjust Ss' criterion means (i.e., their mean z' scores on the Trait Questionnaires they filled out during the Generalization Session) so that the effect of the initial, or covariate, scores would be taken into account in comparison, by inspection, of the Group data. Converting these "adjusted criterion means" back to r's revealed that: (1) Lo NFA Ss attained significantly higher correlations between self and ideal self ratings (mean r converted back from the "adjusted criterion mean" = .54) than did Hi NFA Ss (mean $r = .34$) during the Generalization Session, regardless of the type of phrases on which they had been reinforced; and (2) a significant reinforcement effect indicated that Ss reinforced on positive phrases rated themselves higher than Ss reinforced on negative phrases, while the latter Ss

Table 8a

Mean Correlations on Trait Questionnaire
(All Ss)

NFA	Type of Phrase Reinforced	Group Testing	Generalization
Hi	Pos.	.50	.46
	Neg.	.45	.44
	Rand.	.61	.39
Lo	Pos.	.39	.52
	Neg.	.49	.47
	Rand.	.44	.47

Table 8b

Mean Correlations on Trait Questionnaire
(Hi Mot Ss Only)

NFA	Type of Phrase Reinforced	Group Testing	Generalization
	Pos.	.49	.45
Hi	Neg.	.42	.40
	Rand.	.58	.43
	Pos.	.39	.54
Lo	Neg.	.50	.49
	Rand.	.45	.45

rated themselves higher than the randomly reinforced Control Ss. The mean correlations (also converted back to r's from the "adjusted criterion means") for the three Groups were .51, .44, and .35, respectively. So far as the author can discover, there is no way to perform individual comparisons between the mean correlations of these three Groups, because of their being derived from adjusted mean scores.

Personality Questionnaire. Subjects' scores on the Personality Questionnaire (see Tables 9a and 9b) were derived from their ratings of face valid items describing feelings of personal adequacy or inadequacy. Bartlett's test for homogeneity of variance was performed on these data, and no significant differences were found between the variances of the six Groups to be analyzed (Hi and Lo NFA, reinforced on positive, negative, or random phrases) ($X^2 = 4.08$; df = 5; $p > .10$). The raw data on these Ss were then also analyzed by means of a two factor (NFA and type of phrase reinforced) analysis of covariance in order to control for variations in initial ratings. Analyses on both Hi and Lo Mot Ss and on Hi Mot Ss considered separately yielded no significant results (see Appendix N, Tables 34 and 35).

The Role of Need for Consistency of Self-Presentation in Mediating Generalization Effects

As outlined earlier, it was decided that Ss who reported changing

Table 9a

Mean Scores on Personality Questionnaire
(All Ss)

NFA	Type of Phrase Reinforced	Group Testing	Generalization
Hi	Pos.	69.07	71.93
	Neg.	68.53	69.35
	Rand.	63.00	64.63
Lo	Pos.	64.93	67.80
	Neg.	69.69	71.50
	Rand.	66.44	67.44

Table 9b

Mean Scores on Personality Questionnaire
(Hi Mot Ss Only)

NFA	Type of Phrase Reinforced	Group Testing	Generalization
Hi	Pos.	71.88	73.63
	Neg.	68.43	68.43
	Rand.	59.83	63.17
Lo	Pos.	65.27	68.64
	Neg.	70.14	71.79
	Rand.	66.57	67.43

their self-ratings in the direction they had been reinforced would be divided randomly into three Groups. The Groups received differing communications as to why they might have changed their ratings. Unfortunately, only 28 of the 72 Experimental Ss reported such changes. Furthermore, five of the eight Experimental Ss who chose to leave the experiment after the Conditioning Session were among these 28. Dividing the remaining Ss among three conditions during the course of the experiment did not provide data which could be meaningfully broken down into sub-groups for data analysis. Also, it should be noted that there was actually no relationship between the direction of change reported by these Ss and their actual change: Thirteen out of the 23 "Aware of Change" Ss did not change in the direction in which they said they had changed.

Validity Questionnaire

The Validity Questionnaire (see Appendix G) was filled out by Ss immediately after each of the three administrations of the SVT Test (Group Testing, Conditioning, and Generalization). As was described earlier, its purpose was to obtain a measure of Ss' reported honesty in filling out the ratings. The Questionnaire consisted of four 11 point rating scales. Subjects' ratings on these scales were intercorrelated, and the results are reported in Appendix O, Table 37. Since none of the correlations was high enough to warrant combining any of the questions, it was

decided to investigate Ss' ratings of Question 2, which was:

> If your friends were asked to describe you, how similar do you think their ratings of you would be to the ratings you just made?

The reason Question 2 was chosen for analysis was that it is the only one of the questions which Ss could not possibly misinterpret to be asking in part for their opinions of the phrases they had rated. The other questions ask how valid an overall picture Ss feel they gave of themselves, how representative a picture they gave of themselves, and how stable they feel their ratings were. Since Ss often felt that the Questionnaires they filled out were in the developmental stage (and in fact were specifically told this during the Generalization Session), they may have partially interpreted the other questions as asking their opinion of the experimental instrument. Question 2 is also the only one of the questions which provides Ss with an external criterion with which to compare their ratings. Thus, the definition of "honesty" employed was limited to Ss' evaluations of the similarity of their self-ratings to how they feel others would rate them. Subjects' mean ratings on Question 2 appear in Appendix O, Table 38, and are presented graphically in Fig. 5.

A three factor (NFA, reinforcement, and trials) analysis of variance with repeated measures on one factor ("trials": Group vs. Conditioning vs. Generalization) was performed on Ss' ratings of Question 2. The analysis (see Appendix N, Table 36) yielded a significant NFA effect ($F = 6.63$; $df = 1, 72$; $p < .025$), a significant NFA x reinforcement interaction effect ($F = 6.23$; $df = 2, 72$; $p < .005$) and a significant NFA x

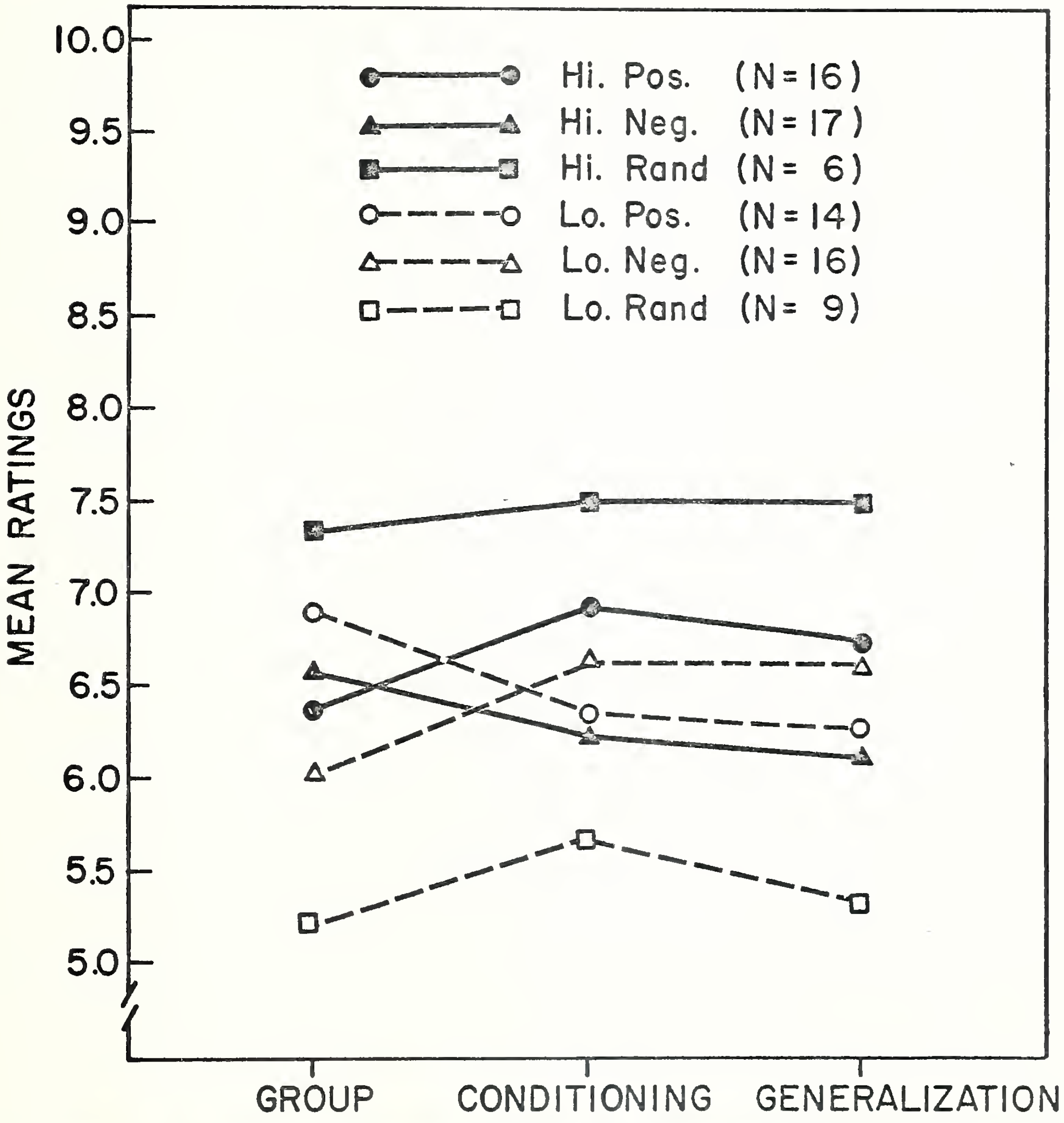


Fig. 5. Subjects' Mean Ratings on Question 2 of the Validity Questionnaire During Group Testing, Conditioning, and Generalization. (Ratings Made on an 11 Point Scale.)

reinforcement x trials interaction effect ($F = 3.28$; $df = 4, 144$; $p < .025$).

Hi NFA Ss tended to rate themselves as having been more honest than Lo NFA Ss. Among the Hi NFA Ss, those reinforced randomly rated themselves as slightly more honest during Conditioning and Generalization than during Group Testing. Interestingly, Hi NFA Ss reinforced on positive phrases rated themselves as having been much more honest during Conditioning and during Generalization than they had rated themselves during the Group Testing Session. On the other hand, Hi NFA Ss reinforced on negative phrases rated themselves as having been much less honest during Conditioning and during Generalization than they had rated themselves during the Group Testing Session.

Those Lo NFA Ss who were reinforced on positive phrases rated themselves in a manner which closely paralleled the ratings of the Hi NFA Ss who were reinforced on negative phrases: Lo NFA Ss rated themselves as having been less honest after conditioning on positive phrases and after the generalization trial blocks than they had rated themselves during Group Testing. On the other hand, Lo NFA Ss reinforced on negative phrases rated themselves as having been much more honest during Conditioning and during Generalization than they had rated themselves during Group Testing. The ratings of these Lo NFA Ss closely paralleled those of the Hi NFA Ss reinforced on positive phrases. Finally, Lo NFA Ss who were randomly reinforced rated themselves highest on honesty after Conditioning and lowest on honesty after Group Testing.

It should be noted that: (1) Hi NFA Ss who were subsequently randomly reinforced appear to have begun, at the time of the Group Testing Session, with higher ratings than Hi NFA Ss assigned to the Experimental Groups, and (2) Lo NFA Ss who were randomly reinforced appear to have begun, in the Group Testing Session, with lower ratings than Lo NFA Experimental Ss. These differences may be non-systematic, and relate to the small N's in the randomly reinforced Control Groups (see Legend, Table 5, page 52). If, on the other hand, they represent sampling error, they would not affect the significance of the interactions which occurred within the Experimental Groups.

Subjects' Acceptance of E_1's Explanation of the Generalization Session

At the end of the Generalization Session, Ss were asked by E_2:

> What would you say was the purpose of my giving you these triads and questionnaires to fill out tonight?

It was hoped that Ss would believe E_1's and E_2's explanations of the Generalization Session, and not report having thought of the possibility of an influence attempt. Awareness of such a possibility could have influenced Ss' ratings, particularly if they were also aware of the direction in which they had been reinforced. Inspection of Ss' responses revealed that none of them reported having thought of the possibility of an influence

attempt. All but 13 of the Ss said either that: (1) they didn't know, or (2) E_2 was collecting normative data, or (3) the tests would be compared with previous ones for estimating stability or validity. The latter two responses were repetitions of what they had been told by E_1 and E_2. Of the remaining 13 Ss, 7 suggested that a comparison of the results of the same tests given by two different E's might be made.

Chapter IV

DISCUSSION

In this chapter, the major experimental results will be reviewed and discussed. Suggestions will be made for future experimentation, and those contributions of the present study which the author regards as most important will be pointed out.

Conditioning Findings

Subjects reinforced for increasing their ratings of positive phrases performed at a significantly higher rate than Control Ss. However, the Experimental Ss were found to maintain their base rate (Group Testing mean) level of responding, whereas Control Ss rated themselves increasingly negatively during the Conditioning Session.

Gergen (1965), using a procedure similar to the one employed in this experiment, found a general tendency among Ss to rate themselves more positively during the dyadic encounter of the experiment than during

a previous Group Testing Session. The findings of the present study are more similar to those reported by Marlowe (1962), and by Rogers (1960). In Marlowe's study, Hi and Lo NFA Ss were reinforced during a 15 minute interview for emitting positive self-references. The Lo NFA Experimental Ss, as well as his two groups of Control Ss, became increasingly negative in their self-descriptions. The Hi NFA Experimental Group exhibited a significant increase from the first to the second third of the interview, but then showed a marked decrement in performance during the last third of the interview. Marlowe suggests that the decline may reflect a reluctance on the part of these Ss to describe themselves repeatedly in such glowing terms. In Rogers' experiment, Ss became increasingly negative in their self-descriptions during the course of the conditioning procedure unless they were specifically reinforced for making positive self-references. The latter Ss, that is, those who were reinforced for increasing the positivity of their self-presentation, continued to respond at their initial rate, as did Ss reinforced on positive phrases in the present experiment. The discrepancy between Gergen's findings, and those of this study and the others cited, may have resulted in part from his use of all female undergraduate Ss and an E who was their peer. Future work might investigate the hypothesis that Ss tend to decrease the positivity of their self-presentation in the presence of a non-judgmental, encouraging, prestigeful E. Such an E may provide an atmosphere in which Ss, especially Hi NFA Ss, could relax their need to make a good

impression, and become more genuine in their self-presentation.

Although Hi NFA Ss did not evidence greater learning effects on positive ratings than Lo NFA Ss, they did perform in a manner which was consistent with the experimental predictions on their ratings of negative phrases: Hi Mot Hi NFA Ss who were randomly reinforced rated themselves increasingly negatively during the conditioning procedure, whereas Hi Mot Hi NFA Ss systematically reinforced for increasing their ratings of negative phrases rated themselves increasingly positively. Furthermore, Hi NFA Ss reinforced on negative phrases comprised the only group not showing a sizeable increase in negativity of self-description on the last conditioning block.

The findings that (1) Hi NFA Ss reinforced randomly became increasingly negative in their self-presentation, and (2) Hi NFA Ss reinforced for increasing the negativity of their ratings became increasingly positive appear, at first blush, to be somewhat surprising. However, a possible explanation of these findings relates to the correlation reported in Chapter I between NFA and measures of self-esteem based on conscious self-presentation on rating scales. It is quite possible that a significant proportion of Ss with reportedly high self-esteem attain their scores more as a result of their need to present themselves in a favorable light than because of any fundamental satisfaction with self. Such an hypothesis could be tested by comparing Hi NFA Hi Esteem Ss and Lo NFA Hi Esteem Ss on measures of self-satisfaction based on levels of personality

measurement other than those employed in the present study. These could include, for example, judges' ratings, and projective measures. In the present experiment, Hi NFA Ss who were randomly reinforced may have initially inflated the positivity of their self-ratings. Subsequently, because of the generally accepting and encouraging attitude of E_1, they may have become increasingly open and straightforward in filling out the ratings. On the other hand, those Hi NFA Ss who were specifically reinforced for increasing the negativity of their self-ratings appear to have responded with increasingly greater defensiveness.

Reinforcement

It was hoped that the reinforcement of asking for elaborations would be equally compelling for Ss regardless of the type of phrase on which they were reinforced. That this was the case was partially confirmed by the fact that no differences were found between groups receiving positive, negative, or random reinforcement in their reported motivation to be asked for elaborations. However, from the point of view of the performance of the Hi NFA Ss, asking for elaborations of negative phrases seemed to operate as a negative reinforcer. These Ss in particular may have become increasingly less interested in gaining feedback, and increasingly more involved in reacting against the challenge to elaborate on their

negative qualities.

The failure to find greater differences between Hi and Lo NFA Ss may also relate in part to the nature of the reinforcement used. Presumably, Hi NFA Ss are more susceptible to social influence than Lo NFA Ss because of the greater importance to them of gaining E's approval. In this experiment, however, the aspect of reinforcement which apparently provided the major portion of Ss' motivation involved feedback, and not E's approval. Future investigators of the learning of self-enhancing and threatening material might therefore do well to vary systematically E's clearly positive vs. negative evaluative responses to Hi and Lo NFA Ss' behaviors.

As was anticipated, consideration of Ss' motivations to gain reinforcement turned out to be highly useful. The performance of Lo Mot Ss appears to have masked a number of significant differences. For example, the difference between Experimental Ss reinforced on positive phrases and the Control Ss with which they were compared attained statistical significance when Lo Mot Ss were excluded from the data analysis.

It may be worth speculating as to whether interpersonal reinforcement should ever be treated as a universal phenomenon analogous to the reinforcement of basic drives in animal Ss. Human Ss apparently differ substantially from one another with respect to their motivation to gain any given social reinforcement. Individual difference variables measuring either (1) Ss' predispositions towards differential motivational states, or

(2) Ss' post-experimental verbalizations regarding their desire to gain the reinforcement can apparently serve a highly useful purpose in understanding Ss' performance in human learning experiments. Pilot work specifically designed to ascertain the most universally compelling reinforcement within the context of a given experimental design may also prove to be helpful.

Generalization Findings

It was suggested in Chapter I that learned changes in Ss' (or patients') personally meaningful verbal behavior take on far greater import as a function of the degree to which these changes can be shown to generalize to extra-experimental (or extra-therapy) situations. The generalization findings in the present experiment are thus considered to be among the most important of the results; they will therefore be discussed in some detail.

Subjects who were reinforced on positive phrases continued their differential performance during the generalization trial blocks of the SVT Test: Experimental Ss continued to maintain their initial response rate, while Control Ss continued to perform at the low rate they had reached at the end of the conditioning blocks. Conditioning effects on Ss' ratings of negative phrases did not generalize to their performance on trial blocks

5 and 6 of the SVT Test.

The finding that the effects of the conditioning of increases in positive self-ratings carried over to the generalization trial blocks suggests that learned changes in Ss' evaluative self-presentation, such as may occur in psychotherapy, probably represent more than transient, situational compliance. The generalization effects in this experiment take on added significance because (1) they occurred in the presence of a second E, and (2) Ss were clearly not aware of the experimental predictions regarding the direction in which their self-ratings were expected to change.

The lack of SVT Test generalization findings on Ss who had been reinforced for increasing their ratings of negative phrases suggests that the effects of attempting to induce Ss to lower the positivity of their self-presentation may be more situationally specific than the effects of reinforcement for increased positivity. Perhaps this type of influence attempt goes against a natural tendency on the part of most people to "put their best foot forward." The reinforcement and learning of evaluatively negative self-descriptions is apparently a highly complex process, and certainly bears further investigation in itself.

The hypothesis which predicted the generalization of learning effects to measures of self-esteem other than the SVT Test was confirmed by Ss' ratings on the Trait Questionnaire, but not by the results of the Personality Questionnaire. On the Trait Questionnaire, Ss who had been reinforced on positive phrases continued to evaluate themselves more positively

(i.e., attained significantly greater r's between ratings of self and ideal self) than Control Ss. However, it was also found that Ss who had been reinforced on negative phrases rated themselves significantly more positively than Control Ss, though their ratings were at the same time significantly less positive than those of the Ss who had been reinforced on positive phrases. Apparently, Ss described themselves more negatively under conditions of general encouragement than when specifically reinforced for doing so. This finding appears to represent in part a continuation of Ss' conditioning performance. As will be recalled, Ss who were randomly reinforced increased the negativity of their self-description, while Hi NFA Ss reinforced on negative phrases rated themselves increasingly positively.

Another unexpected finding with regard to Ss' generalization performance on the Trait Questionnaire was that Lo NFA Ss attained higher r's between self and ideal self than Hi NFA Ss. This held true across the types of phrases which had been reinforced. Since the Lo NFA Ss did not evidence greater learning effects than Hi NFA Ss on the SVT Test (except to a minor degree on negative phrases), these findings are rather difficult to explain. It is conceivable that the generalization of induced changes tends to be stronger in Lo NFA Ss because of their lower "defensiveness." That is, the self-esteem of Lo NFA Ss may be more reality based, and thereby more amenable to influence, at least where the latter is positive in direction.

Finally, it should be mentioned that Ss' scores on the Trait Questionnaire were based on Pearson correlations, which measure the co-variation between Ss' overall pattern of self ratings and their overall pattern of ideal self ratings. Thus, the analyses performed on the Trait Questionnaire did not take into account (1) scale distances between Ss' ratings of self and ideal self, or (2) possible changes in these scale distances from Group Testing to Generalization. Also, it is not possible to specify the extent to which the changes reported in mean r's resulted from differential group changes in the variances of Ss' ratings of self and ideal self. In sum, the empirical measure of self-esteem derived from the Trait Questionnaire refers only to the discrepancy between each S's perception of the configuration of personality characteristics he possesses, and the configuration of characteristics he would ideally like to possess. Thus, the generalization findings based on Ss' ratings of the Trait Questionnaire are based on a measure of self-esteem (or at least the self-presentational aspect of self-esteem) which is quite different from the measure used on the SVT Test.

The reason for the lack of significant findings on the Personality Questionnaire may relate to (1) the relative evaluative strength of the items on the Questionnaire (e.g., Item #1: "How much of the time do you feel that you are a worthwhile individual?"), and (2) the fact that a five point rating scale was used in place of the more subtle measures used on the SVT Test and Trait Questionnaire.

In summary, further investigation of the conditions under which personally meaningful material will generalize beyond the immediate situation in which it is learned is evidently highly warranted. As was noted in Chapter I, the fact that the conditioning of changes in self-presentation may occur in psychotherapy does not at all rule out the possibility that relatively profound, long-standing changes may accompany, or generalize from, these learned verbal responses.

"Honesty" Ratings

An analysis of Ss' responses to Question 2 of the Validity Questionnaire provided evidence of an interaction between Ss' NFA, the type of change E_1 was attempting to induce, and how closely Ss felt their self-descriptions fit the descriptions their friends would make of them. Lo NFA Ss who were encouraged to describe themselves more positively did not feel, upon doing so, that they were being as "honest" (in the interpersonal sense of describing themselves as others see them) as when they were not encouraged to do so. Perhaps this is simply because they become aware of stressing their positive traits. Hi NFA Ss, on the other hand, did not feel as "honest" when they were encouraged to describe themselves more negatively. As will be recalled, these Ss strengthened their tendency to "put their best foot forward." The reason they felt less "honest," then,

was probably related to the fact that they had become more defensive.

Awareness

The prediction was made that Ss would tend to be "unaware," i.e., unable to verbalize the response-reinforcement relationship. "Awareness" was defined as S's verbalization of the fact that he had been asked for elaborations following triads on which he had assigned a relatively high number to the positive (or negative) phrase. The results of an analysis of Ss' responses to the Post-Conditioning Interview provided confirmation of this hypothesis.

A number of Ss (21 out of the 92 in the experiment), however, verbalized the relationship between high ratings on a phrase and E_1's asking for an elaboration of that phrase. The majority of these Ss had been reinforced on positive phrases. It was suggested that these Ss may have become "aware" of this relationship because the reinforced phrase was often rated much higher than the other phrases in the triad, and therefore became obtrusive by virtue of this difference. It could be argued that, since Ss reinforced on positive phrases showed more evidence of learning than Ss reinforced on negative phrases, "partially correct hypotheses" may have played a role in their performance. However, it was felt that "learning without awareness" should not be ruled out in the case of Ss who

did not verbalize (1) the possibility of an influence attempt on the part of E_1, (2) the possibility of succumbing to such an influence attempt, (3) the possibility of having attempted in any way to get E_1 to ask for elaborations, or (4) the relationship between the evaluative nature of the phrases and E_1's asking for elaborations. A substantial number of Ss failed to fulfill all or most of these criteria, and yet showed evidence of learning and generalization.

At the same time, it is clear that Ss tended actively to think about their performance and to try to discover what was going on between themselves and E. Thus, many Ss tended to be able to verbalize aspects of the experimental procedure which were salient to them (such as the relationship between high ratings and reinforcement). Since such verbalizations were at times found to relate systematically to experimental findings, it appears that the cognitive activity of Ss during the experimental procedure may have been an important determinant of Ss' performance. In the opinion of the present author, the dichotomization of Ss into "aware" and "unaware" groups has outlived its usefulness. Future research could shed much light on the nature of human learning, as well as on the concept of "the unconscious" by (1) focussing on careful analyses of Ss' post-experimental verbalizations concerning their thoughts during the experimental procedure, and (2) relating Ss' verbalizations of these thoughts to their performance. These arguments have been advanced in some detail by Farber (1963).

One further aspect of "awareness" which bears mentioning relates

to a tendency on the part of some Ss to "become aware," i.e., to think of some feature of the experimental procedure only upon being asked about it subsequent to the procedure. This interesting finding further points up the futility of dealing with "awareness" as a concrete, unitary phenomenon. The tendency of Ss to "become aware" upon questioning bears further investigation in itself, in that it appears to be akin to what is known in psychoanalytic terminology as the "preconscious."

Summary

In summary, then, the present study provides further evidence that changes can be induced in Ss' evaluative self-descriptions, particularly in the direction of increased positivity. Furthermore, within the limits of the definition of "awareness" employed in this experiment, Ss tended to be "unaware" of having made these changes, or even of having been reinforced for making them. The study thus lends support to the notion that therapists may find it useful to take into account the possibility that they can and may be subtly influencing their patients' verbal behavior by means of social reinforcement.

In some instances, it may be useful to bring to patients' attention: (1) the hypotheses they have been implementing in order to gain reinforcement, as well as (2) the types of reinforcement they appear to be seeking.

The findings lend strong support to Krasner's (1961) position that in all cases, therapists should attempt to be as "aware" as possible of the mutually reinforcing behaviors that they become engaged in with their patients. Based upon this "awareness," the therapist may be better able to: (1) point out these behaviors and reactions to the patient when he deems it appropriate or useful, (2) help the patient learn new patterns of behavior, and (3) understand the therapeutic process, including his contributions to it.

Other findings in the present study suggest that one powerful method for providing patients with social reinforcement would be to furnish them selectively with informational feedback regarding therapists' opinions of them. However, Hi NFA Ss who were reinforced for increasing the negativity of their self-descriptions described themselves increasingly positively as compared with Hi NFA Control Ss. Thus, reinforcement for these Ss may need to be based on somewhat different motivations from reinforcements employed with Lo NFA Ss, if they are being induced to verbalize evaluatively negative self-statements.

The study also provided further evidence that increases in Ss' positivity of self-description will generalize at least to pencil and paper personality questionnaires administered by a different E within a somewhat different context from that in which they were originally learned. This type of finding lends strong support to the contention that verbal operant conditioning may constitute an important part of the

psychotherapeutic process, and that it therefore deserves a good deal of further investigation from this standpoint.

The study of verbal conditioning has been approached mainly from two highly divergent theoretical and methodological points of view (Spielberger and DeNike, 1966). On the one hand, there are a number of theorists (e.g., Skinner, 1957; Greenspoon, 1962) who have made the contention that verbal conditioning can best be studied and understood by the application of the same principles of descriptive behaviorism which typically have been employed in studies of animal learning. At the other extreme are theorists (e.g., Dulany, 1962; Spielberger, 1962) who have taken the position that human Ss will learn only if they are (1) "aware" of the response-reinforcement contingency, (2) motivated to gain reinforcement, and (3) implementing a conscious decision to seek reinforcement.

Both of the above positions have led too often to the conclusion that verbal conditioning is a relatively simple phenomenon, and that its investigation, therefore, has limited potential fruitfulness. Perhaps one of the most important contributions of the present study involves an underscoring of the extreme complexity of verbal operant conditioning, and the presentation of a number of theoretical and methodological approaches for beginning to deal with this complexity.

APPENDIXES

Appendix A

SVT TEST, GROUP FORM

Name (please print clearly):____
last first initial

Instructor:____________________ Box No.:____________ Class:________

INSTRUCTIONS

On the following pages you will find groups of three descriptive phrases. Each of the three phrases could conceivably be descriptive of what you're like at one time or another. However, some of the phrases within a group will usually be more descriptive of you than the others in that group. Your task will be to read one group of three phrases at a time, and to assign points to each of the phrases in that group in the following manner: First, decide how generally descriptive of you each of the phrases is in comparison to the other two in that group. Then distribute 10 points among the phrases in the group, such that the phrase which is most characteristic of you receives the greatest number of points, and the phrase which is least characteristic of you receives the least number of points. In Example 1, the distribution of the 10 points in the group of phrases, or triad, would imply that the phrase "Dislike exams" generally applies to you more than either of the other two phrases, and that it is only very occasionally that you find the Viet Nam crisis boring:

Example 1:

6 a. Dislike exams
3 b. Fond of flashy clothing
1 c. Find the Viet Nam crisis a bore

Example 2:

3 a. Dislike exams
5 b. Friendly and cheerful
2 c. Fond of flashy clothing

It is important that you keep in mind that each triad is to be judged separately, and independently of every other triad. Since some of the triads contain some of the same phrases as others, this will mean that you may at times assign a different number of points to the same phrase. Examples 1 and 2, for instance, could have been filled out by the same person. In Example 1, "Dislike exams" generally applies to him more than either of the other phrases, and he therefore assigns it 6 points. In Example 2, however, "Friendly and cheerful" is even more characteristic of him that "Dislike exams." Therefore, he assigns "Friendly and cheerful" 5 points, while assigning only 3 points to "Dislike exams" because of its different relative position within that triad. Note also that if you assign two phrases within a triad, that means you feel they are equally characteristic of you. However, the fact that "Fond of flashy clothing"

in Example 1 and "Dislike exams" in Example 2 were both assigned 3 points does not imply that the two are equally characteristic of the person who filled them out. Since they are in different triads, they cannot be compared with each other.

While filling out the questionnaire, do not spend a great deal of time deliberating about how many points to assign each phrase. Instead, try to put down your initial impressions of how you feel about yourself at the moment.

Finally, please keep the following points in mind:

A. Do not omit any phrases.
B. Do not use fractions.
C. Please take care to print the numbers legibly.
D. If a phrase is not at all descriptive of you, you may assign it 0 points, but be sure that the total number of points assigned to the three phrases within each group is equal to 10.

1. _____ a. Able to express ideas
_____ b. Bothered by unpleasant events
_____ c. Exaggerates failures

2. _____ a. Able to enliven a dull party
_____ b. Unrealistic aspirations
_____ c. Understanding of problems

3. _____ a. Accommodating to strangers
_____ b. Average childhood
_____ c. Nervous and worrisome

4. _____ a. Affectionate with close friends
_____ b. Likes to tease others
_____ c. Very easily swayed

5. _____ a. Appealing to opposite sex
_____ b. Bears a grudge
_____ c. Good and bad qualities balanced

6. _____ a. Appeals to sympathy
_____ b. Bears a grudge
_____ c. Able to give orders

7. _____ a. As changeable as the weather
_____ b. Enjoys doing things for others
_____ c. Responds to praise with humility

8. _____ a. Attracts odd people
_____ b. Dependent on the direction of others
_____ c. Enjoys travelling

9. _____ a. Bothered by unpleasant events
_____ b. Prefers football over baseball
_____ c. Appears self assured

10. _____ a. Businesslike with acquaintances
_____ b. Exceptionally tolerant
_____ c. Average home life

11. _____ a. Can take criticism
_____ b. Seems insecure
_____ c. Distractible at work

12. ____ a. Can cope with disappointment
____ b. Emotionally distant
____ c. Frequently obedient

13. ____ a. Can't be alone
____ b. Performs best under strong opposition
____ c. Able to finish a task

14. ____ a. Careless about others' belongings
____ b. Must have everyone like him
____ c. Can change if necessary

15. ____ a. Completely truthful and aboveboard
____ b. Lacks discrimination
____ c. Occasionally sarcastic

16. ____ a. Conforms to custom
____ b. Easily led
____ c. More vigorous and enterprising than the average

17. ____ a. Content with life
____ b. Conforms to custom
____ c. Two-faced

18. ____ a. Creative thinker
____ b. Can't resist temptation
____ c. An advice giver

19. ____ a. Decisive and effective in relation with others
____ b. Very respectful to authority
____ c. Seems vulnerable

20. ____ a. Delights in competition
____ b. Humanitarian in outlook
____ c. Will believe anyone

21. ____ a. Distrusting of others
____ b. An advice giver
____ c. Foresees consequences of own acts

22. ____ a. Distrustful of others
____ b. Makes a good impression
____ c. Can complain if necessary

23. ____ a. Does things just for fun
____ b. Overly apologetic
____ c. Can carry out plans

24. _____ a. Easily discouraged
_____ b. Free with compliments
_____ c. Good citizen

25. _____ a. Easily influenced
_____ b. Appreciative of help
_____ c. Can tolerate pain

26. _____ a. Enjoys doing things for others
_____ b. As changeable as the weather
_____ c. Always meeting people he knows

27. _____ a. Firm with subordinates
_____ b. Becomes despondent easily
_____ c. Keeps a promise

28. _____ a. Free and easy disposition
_____ b. Able to dislike others
_____ c. Can be disloyal

29. _____ a. Frequently disappointed
_____ b. Cheerful when situation requires it
_____ c. Cowardly in the face of real danger

30. _____ a. Free and easy disposition
_____ b. Quite active and usually on the go
_____ c. Two-faced

31. _____ a. Frequently hypocritical
_____ b. Rather friendly and responsive
_____ c. Ordinary looking

32. _____ a. Frequently obedient
_____ b. Well thought of
_____ c. Dependent on the direction of others

33. _____ a. Fussy about food
_____ b. Eager to get along with others
_____ c. Immature handling of problems

34. _____ a. Gives up quickly when things go wrong
_____ b. Bothered by unpleasant events
_____ c. Tries to be frank with others

35. _____ a. Good and bad qualities balanced
_____ b. Likely to be a success
_____ c. Refuses help

36. _____ a. Has civilized ideas
_____ b. Appeals for sympathy
_____ c. Gives up easily

37. _____ a. Imitates others
_____ b. Readily shows feelings
_____ c. Usually pleasant and agreeable

38. _____ a. Inspires respect
_____ b. Can be cruel
_____ c. Readily accepts advice

39. _____ a. Irritable at times
_____ b. Says the wrong things
_____ c. Expresses individuality

40. _____ a. Irritable at times
_____ b. Uses others for own ends
_____ c. Attends to others

41. _____ a. Knows own abilities
_____ b. Touchy and easily hurt
_____ c. Occasionally sarcastic

42. _____ a. Leads an interesting life
_____ b. Free with compliments
_____ c. Unaggressive in the face of competition

43. _____ a. Likes to do things with others
_____ b. Sometimes phony
_____ c. Not photogenic

44. _____ a. More strongwilled than the average
_____ b. Overprotective of others
_____ c. Enjoys movies

45. _____ a. Must be the center of attention
_____ b. Knows right from wrong
_____ c. Very respectful to authority

46. _____ a. Often stubborn
_____ b. Invariably easy to meet and talk to
_____ c. The peacemaker in others' arguments

47. _____ a. Organizes activities well
_____ b. Aloof when busy
_____ c. Has an angry look

48. _____ a. Prefers plays over movies
_____ b. Proud and self-satisfied
_____ c. Patient with others

49. _____ a. Pretty fair minded
_____ b. Easily influenced
_____ c. Frequently obedient

50. _____ a. Quite active and usually on the go
_____ b. Sometimes rude
_____ c. Has good judgment

51. _____ a. Refuses help
_____ b. Can display tenderness
_____ c. Afraid to try new things

52. _____ a. Resentful of others
_____ b. Can take charge of things
_____ c. Absent minded about appointments

53. _____ a. Resentful of others
_____ b. More emotionally mature than the average
_____ c. Attracts odd people

54. _____ a. Resistant to changing
_____ b. More emotionally mature than the average
_____ c. Free with compliments

55. _____ a. Responds to praise with humility
_____ b. Can influence others
_____ c. Two-faced

56. _____ a. Seeks relaxation
_____ b. Keeps distance from others
_____ c. Clean and neat

57. _____ a. Simple and uncomplicated
_____ b. Irritates others
_____ c. Patient with others

58. _____ a. Sometimes phony
_____ b. Businesslike with acquaintances
_____ c. Uninhibited with friends

59. _____ a. Stays in background in social groups
_____ b. Can be consoled
_____ c. Tries to be sincere with others

60. _____ a. Thinks logically
_____ b. Readily shows feelings
_____ c. Lacks discrimination

61. _____ a. Tries things even though expects failures
_____ b. Able to sacrifice for others
_____ c. Sometimes rude

62. _____ a. Unable to express ideas in a group
_____ b. Able to sacrifice for others
_____ c. Needs to be sought after

63. _____ a. Unaggressive in the face of competition
_____ b. Needs to be sought after
_____ c. Efficient worker

64. _____ a. Uncomfortable about sexual behavior
_____ b. Re-strives after failure
_____ c. Average childhood

65. _____ a. Understands dreams
_____ b. Considerate of others' attitudes
_____ c. Shrinks from crises

66. _____ a. Uses others for his own ends
_____ b. Not always systematic in work habits
_____ c. Overcomes own weaknesses

67. _____ a. Uses own talents
_____ b. Enjoys movies
_____ c. Swept along by events

68. _____ a. Usually self conscious
_____ b. Has a bright future
_____ c. Always meeting people he knows

69. _____ a. Very accepting and approachable
_____ b. Resentful of others
_____ c. Aloof when busy

70. _____ a. Very orderly and meticulous in work
_____ b. Independent thinker
_____ c. A disturbing influence in groups

71. _____ a. Very easily swayed
_____ b. Has a stern air
_____ c. Usually relaxed

72. ____a. Very straightforward
____b. Carefully deliberates important decisions
____c. Must have everyone like him

Appendix B

PERSONAL REACTION INVENTORY
(Marlowe-Crowne Social
Desirability Scale)

Personal Reaction Inventory

Name (please print clearly): ______________________________
last first initial

Instructor: ________________ Box No.: __________ Class: __________

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. If the item is true or generally true of you, print a T on the line to its left. If the item is false or generally false as it applies to you, print an F on the line to its left. Please do not omit any items.

____ 1. Before voting I thoroughly investigate the qualifications of all the candidates.

____ 2. I never hesitate to go out of my way to help someone in trouble.

____ 3. It is sometimes hard for me to go on with my work if I am not encouraged.

____ 4. I have never intensely disliked anyone.

____ 5. On occasion I have had doubts about my ability to succeed in life.

____ 6. I sometimes feel resentful when I don't get my way.

____ 7. I am always careful about my manner of dress.

____ 8. My table manners at home are as good as when I eat out in a restaurant.

____ 9. If I could get into a movie without paying and be sure I was not seen I would probably do it.

____ 10. On few occasions, I have given up doing something because I thought too little of my ability.

____ 11. I like to gossip at times.

____ 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

____ 13. No matter who I'm talking to, I'm always a good listener.

____ 14. I can remember "playing sick" to get out of something.

____ 15. There have been occasions when I took advantage of someone.

_____16. I'm always willing to admit it when I make a mistake.

_____17. I always try to practice what I preach.

_____18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.

_____19. I sometimes try to get even rather than to forgive and forget.

_____20. When I don't know something I don't mind admitting it.

_____21. I am always courteous, even to people who are disagreeable.

_____22. At times I have really insisted on having things my own way.

_____23. There have been occasions when I felt like smashing things.

_____24. I would never think of letting someone else be punished for my wrongdoings.

_____25. I never resent being asked to return a favor.

_____26. I have never been irked when people expressed ideas very different from my own.

_____27. I never make a long trip without checking the safety of my car.

_____28. There have been times when I was quite jealous of the good fortune of others.

_____29. I have almost never felt the urge to tell someone off.

_____30. I am sometimes irritated by people who ask favors of me.

_____31. I have never felt that I was punished without cause.

_____32. I sometimes think when people have a misfortune they only get what they deserved.

_____33. I have never deliberately said something that hurt someone's feelings.

Appendix C

PERSONALITY QUESTIONNAIRE

Name__________________________________

Personality Questionnaire

Please answer the following questions truthfully by placing an X on the one most appropriate line.

1. How much of the time do you feel that you are a worthwhile individual?

____Very often
____Fairly often
____Sometimes
____Once in a great while
____Practically never

2. How confident do you feel that some day the people you know will look up to you and respect you?

____Very
____Fairly
____Slightly
____Not very
____Not at all

3. How often do you feel inferior to most of the people you know?

____Very often
____Fairly often
____Sometimes
____Once in a great while
____Practically never

4. How often do you feel to blame for your mistakes?

____Very often
____Fairly often
____Sometimes
____Once in a great while
____Practically never

5. Do you ever feel so discouraged with yourself that you wonder whether anything is worthwhile?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

6. How often do you feel that you like yourself?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

7. How often do you worry about criticisms that might be made of your work by whoever is responsible for checking up on your work?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

8. How often do you have the feeling that you can do well at many different things?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

9. How much of the time do you feel confident that you get along well with other people?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

10. In general, how confident do you feel about your abilities?

___Very
___Fairly
___Slightly
___Not very
___Not at all

11. How relaxed and self-assured do you usually feel when you are going into a room by yourself where other people have already gathered and are talking?

___Very
___Fairly
___Slightly
___Not very
___Not at all

12. How often do you feel self-conscious?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

13. When you have to talk in front of a class or a group of people your own age, how relaxed and self-assured do you usually feel?

___Very
___Fairly
___Slightly
___Not very
___Not at all

14. When you are trying to win in a game or sport and you know that other people are watching you, how rattled or flustered do you usually get?

___Very
___Fairly
___Slightly
___Not very
___Not at all

15. How confident do you feel that other people will regard you as a success in your job or career?

___Very
___Fairly
___Slightly
___Not very
___Not at all

16. When in a group of people, how much of the time are you easily able to think of the right things to talk about?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

17. When you have made an embarrassing mistake or have done something that makes you look foolish, how long do you usually keep on worrying about it?

___Very
___Fairly
___Slightly
___Not very
___Not at all

18. Do you find it easy to make talk when you meet new people?

___Very
___Fairly
___Slightly
___Not very
___Not at all

19. How often do you feel sure that other people like to be with you?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

20. How often are you troubled with shyness?

___Very often
___Fairly often
___Sometimes
___Once in a great while
___Practically never

Appendix D

TRAIT QUESTIONNAIRE
Part I (Ideal Self)

Name (please print clearly): ______________________________
Last First Initial

Instructor: ____________________ Box No. ________ Class ________

TRAIT QUESTIONNAIRE

Ideal Self

Instructions

On the following pages, you will find a number of traits listed. Following each trait is a horizontal scale line. Your task will be to indicate on these scale lines the degree to which you would like each of the traits to be characteristic of you. You are to do this by drawing a short vertical line straight down through each horizontal scale line wherever the scale represents the degree to which you would like the trait to be characteristic of you. The far right of each scale line represents the point through which you would draw the vertical line if you felt that you would like the trait to which it refers to be EXTREMELY characteristic of you. The far left of each scale line represents the point through which you would draw the line if you felt that you would like the trait to which it refers to be NOT AT ALL characteristic of you, if you could be any way you wanted to be. You may, of course, draw the vertical lines anywhere between these end points.

Example 1. If one of the traits were "RELIGIOUS," and you felt that you would ideally like to be EXTREMELY religious, you would draw the line at the far right of the scale, as follows:

Religious:

____|

Not at all Extremely

Example 2. If you decided that you would ideally like to be NOT AT ALL religious, you would draw the line at the far left of the scale, as follows:

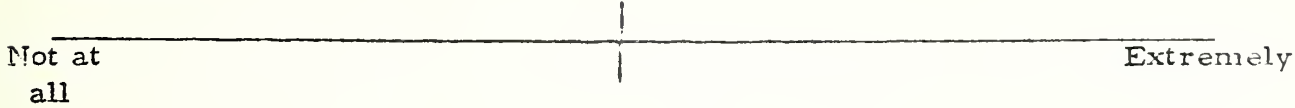
Religious:

|____

Not at all Extremely

Example 3. To take one other example, if you felt that you would *ideally* like to be, say, moderately religious, you might draw your line somewhere closer to the center, as follows:

Religious:



Again, you may draw your vertical lines *anywhere at all along the horizontal scale lines* between NOT AT ALL and EXTREMELY. Where you draw each line will depend on the degree to which you would *ideally* like the trait to which it refers to be characteristic of you.

Remember, you are to fill out this questionnaire to show how you would *ideally* like to be, and *not* how characteristic of you these traits actually are.

Please be sure to draw one thin clear line straight down *through* each horizontal scale line, as in the above examples.

1. Generally Able (talented; competent; etc.):

Not at all ____ Extremely

2. Hard Working (industrious; having good study habits; efficient in getting things done; etc.):

Not at all ____ Extremely

3. Socially Poised (at ease in social graces; at ease with opposite sex; tactful; possessing "savior faire;" etc.):

Not at all ____ Extremely

4. Leadership Abilities (able to organize; able to coordinate the efforts of others; etc.):

Not at all ____ Extremely

5. Helpful to others:

Not at all ____ Extremely

6. Emotionally Stable ("solid;" well rounded; etc.):

Not at all ____ Extremely

7. Considerate of others (respectful of others; concerned about others; thoughtful; kind; unselfish, etc.):

Not at all ____ Extremely

8. Good-looking (pleasant physical appearance; good build; etc.):

Not at all ______________________________ Extremely

9. Good sense of humor:

Not at all ______________________________ Extremely

10. Moral (righteous; virtuous; etc.):

Not at all ______________________________ Extremely

11. Courageous (brave; not afraid to try new things; etc.):

Not at all ______________________________ Extremely

12. Creative:

Not at all ______________________________ Extremely

13. Calm (easy going; even keeled; "cool;" etc.):

Not at all ______________________________ Extremely

14. Loyal (faithful to persons and ideals, etc.):

Not at all ______________________________ Extremely

15. Sociable (outgoing; mixing well with others; getting along well with others; enjoying the company of other people, etc.):

Not at all ______________________________ Extremely

16. Aggressive (active; assertive; energetic; etc.):

Not at all ____ Extremely

17. Good Conversationalist:

Not at all ____ Extremely

18. Cheerful (happy ; etc.):

Not at all ____ Extremely

19. Courteous:

Not at all ____ Extremely

20. Friendly (congenial; affable; pleasant; agreeable; good-natured):

Not at all ____ Extremely

21. Sincere (not hypocritical; genuine; unaffected; not phony; being one's self):

Not at all ____ Extremely

22. Honest (having integrity; honor; etc.):

Not at all ____ Extremely

23. Intelligent:

Not at all ____ Extremely

24. Serious:

Not at all ________________________________ Extremely

25. Frank (straightforward; etc.):

Not at all ________________________________ Extremely

26. Self-confident:

Not at all ________________________________ Extremely

27. Determined (motivated; purposeful; having a sense of direction; etc.):

Not at all ________________________________ Extremely

28. Responsible (trustworthy; dependable; reliable; etc.--in dealing with others, as well as in regard to personal obligations):

Not at all ________________________________ Extremely

29. Humorous (witty, funny, etc.):

Not at all ________________________________ Extremely

30. Humble:

Not at all ________________________________ Extremely

31. Self-respecting (self-pride; etc.):

Not at all ________________________________ Extremely

32. Athletic Ability:

Not at all ____ Extremely

33. Interesting:

Not at all ____ Extremely

34. Tolerant (treating everyone equally; no class distinction; etc.):

Not at all ____ Extremely

35. Mature:

Not at all ____ Extremely

36. Fun-loving (able to have a good time; let oneself go; life of party; spirited; etc.):

Not at all ____ Extremely

37. Neat and Clean Appearance:

Not at all ____ Extremely

38. Understanding (perceptive of others' feelings; easy to talk to; sympathetic; etc.):

Not at all ____ Extremely

39. Individualistic:

Not at all ____ Extremely

Appendix D (cont.)

TRAIT QUESTIONNAIRE
Part II (Self)

Name (please print clearly): ______________________________
Last First Initial

Instructor: ____________________ Box No. __________ Class __________

TRAIT QUESTIONNAIRE

Self

Instructions

On the following pages you will find a number of traits listed. Following each trait is a horizontal scale line. Your task will be to indicate on these scale lines the degree to which each of the traits is characteristic of you. You are to do this by drawing a short vertical line straight down through each horizontal scale line wherever the scale represents the degree to which the trait is characteristic of you. The far right of each scale line represents the point through which you would draw the vertical line if you felt that the trait to which if refers is EXTREMELY characteristic of you. The far left of each scale line represents the point through which you would draw the line if you felt that the trait to which it refers is NOT AT ALL characteristic of you. You may, of course, draw the vertical lines anywhere between these end points.

Example 1. If one of the traits were "RELIGIOUS," and you feel that you are an EXTREMELY religious person, you would draw the line at the far right of the scale, as follows:

Religious:

____|

Not at all Extremely

Example 2. If you feel that you are NOT AT ALL religious, you would draw the line at the far left of the scale, as follows:

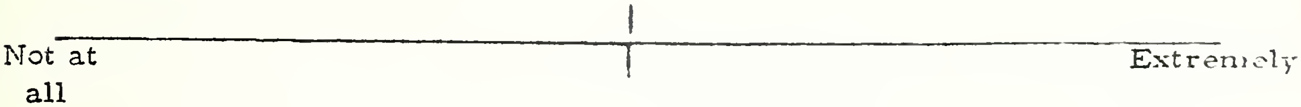
Religious:

|____

Not at all Extremely

Example 3. To take one other example, if you feel that you are, say, moderately religious, you would probably draw the vertical line somewhere closer to the center, as follows:

Religious:



Again, you may draw your vertical lines anywhere at all along the horizontal scale lines between NOT AT ALL and EXTREMELY. Where you draw each line will depend on the degree to which you feel the trait to which it refers is actually characteristic of you as a person.

Remember, you are to fill out this questionnaire to show how characteristic of you these trails actually are, and not, as in the previous questionnaire, to show how characteristic of you you would like them to be.

Please be sure to draw one thin clear line straight down through each horizontal scale line, as in the above examples.

Do not spend a great deal of time deliberating about where to draw each line. Your initial impressions are far more important.

1. Generally Able (talented; competent; etc.):

Not at all ____ Extremely

2. Hard Working (industrious; having good study habits; efficient in getting things done; etc.):

Not at all ____ Extremely

3. Socially Poised (at ease in social graces; at ease with opposite sex; tactful; possessing "savior faire;" etc.):

Not at all ____ Extremely

4. Leadership Abilities (able to organize; able to coordinate the efforts of others; etc.):

Not at all ____ Extremely

5. Helpful to others:

Not at all ____ Extremely

6. Emotionally Stable ("solid;" well rounded; etc.):

Not at all ____ Extremely

7. Considerate of others (respectful of others; concerned about others; thoughtful; kind; unselfish, etc.):

Not at all ____ Extremely

8. Good-looking (pleasant physical appearance; good build; etc.):

Not at all ____ Extremely

9. Good sense of humor:

Not at all ____ Extremely

10. Moral (righteous; virtuous; etc.):

Not at all ____ Extremely

11. Courageous (brave; not afraid to try new things; etc.):

Not at all ____ Extremely

12. Creative:

Not at all ____ Extremely

13. Calm (easy going; even keeled; "cool;" etc.):

Not at all ____ Extremely

14. Loyal (faithful to persons and ideals, etc.):

Not at all ____ Extremely

15. Sociable (outgoing; mixing well with others; getting along well with others; enjoying the company of other people, etc.):

Not at all ____ Extremely

16. Aggressive (active; assertive; energetic; etc.):

Not at all ______________________________ Extremely

17. Good Conversationalist:

Not at all ______________________________ Extremely

18. Cheerful (happy ; etc.):

Not at all ______________________________ Extremely

19. Courteous:

Not at all ______________________________ Extremely

20. Friendly (congenial; affable; pleasant; agreeable; good-natured):

Not at all ______________________________ Extremely

21. Sincere (not hypocritical; genuine; unaffected; not phony; being one's self):

Not at all ______________________________ Extremely

22. Honest (having integrity; honor; etc.):

Not at all ______________________________ Extremely

23. Intelligent:

Not at all ______________________________ Extremely

24. Serious:

Not at all ____ Extremely

25. Frank (straightforward; etc.):

Not at all ____ Extremely

26. Self-confident:

Not at all ____ Extremely

27. Determined (motivated; purposeful; having a sense of direction; etc.):

Not at all ____ Extremely

28. Responsible (trustworthy; dependable; reliable; etc.--in dealing with others, as well as in regard to personal obligations):

Not at all ____ Extremely

29. Humorous (witty, funny, etc.):

Not at all ____ Extremely

30. Humble:

Not at all ____ Extremely

31. Self-respecting (self-pride; etc.):

Not at all ____ Extremely

32. Athletic Ability:

Not at all ____ Extremely

33. Interesting:

Not at all ____ Extremely

34. Tolerant (treating everyone equally; no class distinction; etc.):

Not at all ____ Extremely

35. Mature:

Not at all ____ Extremely

36. Fun-loving (able to have a good time; let oneself go; life of party; spirited; etc.):

Not at all ____ Extremely

37. Neat and Clean Appearance:

Not at all ____ Extremely

38. Understanding (perceptive of others' feelings; easy to talk to; sympathetic; etc.):

Not at all ____ Extremely

39. Individualistic:

Not at all ____ Extremely

Appendix E

PRE-CONDITIONING INTERVIEW

1. Please begin by telling me briefly about why you're studying psychology, what you think of it, and how it fits into your education generally. (45 seconds)[1]

2. (reinforcement)[2] Now could you tell me something about your major interests, hobbies, vocational objectives, and goals in life? (90 seconds)

3. (reinforcement) Now tell me a little about the other members of your family, how you feel about them and get along with them. (75 seconds)

4. (reinforcement) Now tell me something about your social life, including how generally self-confident you feel in your relationships with male friends and with members of the opposite sex. (90 seconds)

---

[1] If S was silent for 10 seconds, and there were more than 20 seconds remaining before the next question was to be asked, E_1 said, "Can you tell me a little more about. . ." and filled in the appropriate part of the question. After 10 seconds of silence on #4, E_1 said, "Can you tell me more about what your social life is like; the things you do, who you do them with, that type of thing. . ." Also, E_1 took notes in order to make silences less awkward, and lend additional credibility to the procedure.

[2] In order to aid in establishing himself as a social reinforcer, E_1 nodded and said, "I see," "O.K.," or "Fine" before asking questions 2, 3, and 4.

Appendix F

SCORING SHEETS FOR SVT TEST

Name of Subject ____________________

Sums of Scores Assigned to
Positive, Neutral, and Negative Phrases

Trial Block 1				Trial Block 2				Trial Block 3			
Triad	Pos	Neut	Neg	Triad	Pos	Neut	Neg	Triad	Pos	Neut	Neg
1 ____				13 ____				25 ____			
2 ____				14 ____				26 ____			
3 ____				15 ____				27 ____			
4 ____				16 ____				28 ____			
5 ____				17 ____				29 ____			
6 ____				18 ____				30 ____			
7 ____				19 ____				31 ____			
8 ____				20 ____				32 ____			
9 ____				21 ____				33 ____			
10 ____				22 ____				34 ____			
11 ____				23 ____				35 ____			
12 ____				24 ____				36 ____			
SUB TOTALS											

Trial Block 4

Triad	Pos	Neut	Neg
37 ______			
38 ______			
39 ______			
40 ______			
41 ______			
42 ______			
43 ______			
44 ______			
45 ______			
46 ______			
47 ______			
48 ______			
SUB TOTALS			

POSITIVE PHRASES

Trial Block 1 ______

Trial Block 2 ______

Trial Block 3 ______

Trial Block 4 ______

TOTAL: ________

NEUTRAL PHRASES

Trial Block 1 ______

Trial Block 2 ______

Trial Block 3 ______

Trial Block 4 ______

TOTAL: ________

NEGATIVE PHRASES

Trial Block 1 ______

Trial Block 2 ______

Trial Block 3 ______

Trial Block 4 ______

TOTAL: ________

Name of subject ____________________

Sums of Scores Assigned to Positive, Neutral, and Negative Phrases

Trial Block 5				Trial Block 6			
Triad	Pos	Neut	Neg	Triad	Pos	Neut	Neg
49				61			
50				62			
51				63			
52				64			
53				65			
54				66			
55				67			
56				68			
57				69			
58				70			
59				71			
60				72			
SUB TOTALS							

POSITIVE PHRASES	NEUTRAL PHRASES	NEGATIVE PHRASES
Trial Block 5 ____	Trial Block 5 ____	Trial Block 5 ____
Trial Block 6 ____	Trial Block 6 ____	Trial Block 6 ____
TOTALS: ____	____	____

Appendix G

VALIDITY QUESTIONNAIRE

Name ______________________________

Validity Questionnaire

1. To what extent do you feel that the self ratings just completed were truly representative of yourself? (Place a check in one of the spaces to indicate what percentage of the time you felt your ratings were truly representative.)

0	10	20	30	40	50	60	70	80	90	100
Completely non-representative										Completely representative

2. If your friends were asked to describe you, how similar do you think their ratings of you would be to the ratings you have just made? (Place a check in the space which would indicate your estimate of the amount of agreement between your ratings and those of your friends.)

0	10	20	30	40	50	60	70	80	90	100
No agreement whatsoever										Complete agreement

3. All of us change certain feelings about ourselves from time to time. Regarding other feelings, we maintain a fair degree of confidence. Thinking about the ratings you just made, in general how confident are you in their stability?

0	10	20	30	40	50	60	70	80	90	100
Not at all confident										Very confident

4. To what extent do you feel that the ratings you just completed provide an overall picture of your major feelings and attitudes about yourself?

0	10	20	30	40	50	60	70	80	90	100
Not at all										Extremely

Appendix H

POST-CONDITIONING INTERVIEW

Name_______________________

1. Comparing today's ratings with those you made in the group testing procedure earlier in the semester, do you feel that today you changed in the direction of presenting

__________a somewhat more favorable picture of yourself, or
__________a somewhat less favorable picture of yourself?
__________Or do you feel you gave exactly the same impression of yourself both times?

If more or less favorable, ask (a) and (b):

(a) Please tell me any ideas you can think of about why you changed in the direction you did, that is, why you rated yourself (more) (less) favorably than before.

(b) On which of the two rating procedures do you feel you gave a more typical picture of what you're like most of the time?

If "exactly the same," ask (c), 2, and 3:

(c) If you had to guess whether you were slightly more favorable towards yourself today or during group testing, would you be able to guess with any degree of certainty? What would your guess be?

2. Comparing the general impression you gave of yourself on today's procedure with the average, typical impression you feel you would have given of yourself if you had filled out this questionnaire many different times since you started college, would you say that today you presented

__________a somewhat more favorable picture of yourself, or
__________a somewhat less favorable picture of yourself?
__________Or do you feel that today's ratings represent a very average, typical impression of what you've been like for some time?

(If more or less favorable, ask Question 3.)

3. Please tell me any ideas you can think of about why you gave a (more) (less) favorable picture of yourself today.

4. Did you think of any ideas about what the purpose of the rating procedure might have been, other than its stated purpose to see how well I could predict your ratings?

   (a) When did these ideas first occur to you?

5. (a) Did you get the feeling that it pleased me when I was able to accurately predict your ratings?

   (b) How much did it matter to you whether I was pleased by your ratings?

   ___________Not at all
   ___________Somewhat
   ___________Quite a bit, or
   ___________A great deal

   (c) Did you in any way try to please me by the ratings you made?

6. (a) Did you have the feeling when I asked you to elaborate on some of the items that I was interested in you as a person, rather than simply as an experimental subject?

(b) How much did you want me to ask you to elaborate on items?

__________Not at all
__________Somewhat
__________Quite a bit, or
__________A great deal

(c) Did you in any way try to get me to ask you for elaborations?

7. (a) While you were rating the triads, did you remember that I was asking for elaborations only after some of the triads I agreed with you on, and that those were the only triads you could be sure I had agreed with you on?

(b) How much did you want to know whether my ratings agreed with yours?

__________Not at all
__________Somewhat
__________Quite a bit, or
__________A great deal

(c) Did you in any way try to make it easier for me to predict your ratings?

8. In your opinion, was there some connection between the particular numbers you wrote down on each triad, and whether or not I asked you a question about one of the phrases on that triad?

9. Did you notice anything in common about the phrases I asked you to elaborate on?

   (a) When did that idea first occur to you?

10. Do you feel that anything I said or did might have influenced in any way the number of points you assigned to any of the phrases?

Appendix I

"EXPLANATIONS" OF EXPERIMENT READ TO CONTROL AND CONTROL-INFORMED Ss

The Informed Ss were read the following explanation of the experiment:

> Each triad that you rated contained a positive, a negative, and a neutral phrase, as judged by undergraduates asked to rate the phrases according to how desirable they are to have. I was not actually predicting your ratings, but rather writing down which was the positive, which the negative, and which the neutral phrase in each triad. Then, every time you rated a (positive) (negative) phrase with a higher number than you gave it on the questionnaire you filled out during the group testing session earlier this semester, I asked you for an elaboration of that (positive) (negative) phrase.
>
> My hypothesis is that asking for elaborations will reinforce subjects and cause them to rate (positive) (negative) phrases higher and higher during the course of the rating procedure. There are several reasons that asking for elaborations is reinforcing: One is that these are the only triads on which subjects are led to believe that they are getting some FEEDBACK on whether or not I agreed with them; another is that subjects are led to believe, for example by my complaining that I'm not doing too well, that I am PLEASED when I predict their ratings accurately; and still another reinforcing aspect to the elaborations is that subjects are encouraged to think about themselves in more (positive) (negative) terms by means of the elaborations, and are generally supported for making these kinds of statements about themselves.
>
> (NOT READ, but spoken "spontaneously") I might add that so far there's been a very high correlation in this experiment between the reinforcement and subjects'becoming more (positive) (negative) in their ratings. That is, subjects such as yourself, who rated themselves more (positively) (negatively) than previously have tended to be the same subjects whom I asked for elaborations on that kind of phrase. Any questions?

E_1 then signed S's card so that he would receive credit for having participated in the experiment.

Control-Informed Ss were read the following:

> Each triad that you rated contained a positive, a negative, and a neutral phrase, as judged by undergraduates asked to rate the phrases according to how desirable they are to have. I was not actually predicting your ratings, but rather writing down the ratings you made during

the group testing session on the positive, the negative, and the neutral phrase in each triad. Then, every time you rated a phrase differently from the way you had rated it during the group testing session, I asked you for an elaboration of that phrase. Hopefully, subjects' answers to these elaborations will give me an idea of which phrases are less stable over time, and why.

My hypothesis is that this rating procedure, which was developed here at Duke some time ago, and is called the Self-Valuation Triads Test, is a highly stable and reliable measure of how generally favorable or unfavorable an impression people have of themselves. I'm expecting subjects to obtain very similar scores on the group testing form and on this more personal, individual form you took today, despite the very different format of the way it's presented. Obviously, subjects had to be led to believe that the test was being given for another purpose, because knowledge that their scores were being compared with previous scores could have influenced their ratings.

(NOT READ, but spoken "spontaneously") I might add that most of the subjects I've run so far have not changed the overall impression they gave of themselves. Of those who did report a change, such as yourself--let's see, I believe you said you feel you rated yourself somewhat more (positively) (negatively)--most of these subjects have related this change to events in their lives which actually seem to have affected their opinions of themselves.

Appendix J

INSTRUCTIONS, GENERALIZATION SESSION

After greeting S, E_2 said:

As Mr. Stein probably told you, a few of us are collecting some data on personality tests in order to obtain norms on Duke undergraduates. Would you have a seat here please? By the way, a few subjects have gotten confused and stayed because they thought this was part of the same experiment they were in down the hall. It's not.

Upon administration of the generalization tasks, E_2 read the following instructions:

Trait Questionnaire. You may have filled out this questionnaire earlier in the semester, but we're giving it again to find out how stable the various items are when subjects fill them out at different times. Also, we want to know which items are most sensitive to changes in subjects' feelings. Therefore, it's important to us that while you fill these out, you do NOT try to remember previous ratings you made. Review the instructions, and while filling out the questionnaires, answer the items according to how you feel about yourself at the moment. Please remember to print your name at the top of each test. Don't forget that the instructions of Ideal Self and Self are different.

Personality Questionnaire. Here's the next test. Please write your name at the top and fill it out now.

SVT Test. O.K. We're gathering some normative data on another, much shorter form of the rating procedure you engaged in with the other experimenter. We'd like to find out whether this short form will give results similar to the results of the longer form, or whether subjects tend to obtain different scores on the two forms. Your scores on this particular procedure will not be looked at individually, and they will not be compared with previous ratings you made. They're simply going to be pooled with those of the other subjects in order to get some normative data. It is very important that while you're making these ratings, you do not think back to what you've done before, or to what you were told about the other rating procedure. Instead, be sure to put down your initial impressions--your immediate reactions to the phrases. I'll be using the procedure in the same way as the other experimenter, so unless you have any questions, let's get started.

Validity Questionnaire and Post-Generalization Questionnaire. Please fill these out now.

Appendix K

POST-GENERALIZATION QUESTIONNAIRE

Name ____________________

1. Comparing the ratings you made with the other experimenter to those you have just made, would you say that on this last rating you presented

   ________ a somewhat more favorable picture of yourself or

   ________ a somewhat less favorable picture of yourself?

   ________ Or did you give self-impressions so similar that it is very difficult for you to make this distinction?

2. On which of today's procedures do you feel you gave a more accurate picture of yourself?

3. Please write down any ideas you may have about why you changed in the direction you did.

4.[a] What would you say was the purpose of my giving you these triads and questionnaires to fill out tonight?

[a] This question was asked verbally by E_2.

Appendix L

SELF-VALUATION TRIADS TEST SCORES

Table 10a

Mean Ratings Per Trial Block on SVT Test (All Ss)

Group[a]	Conditioning Blocks				Generalization Blocks	
	1	2	3	4	5	6
Hi Pos. Experimental	56.49	53.88	58.88	55.65	57.82	59.45
Hi Pos. Control	54.90	54.80	53.60	54.00	56.75	52.50
Lo Pos. Experimental	55.42	56.25	56.36	56.03	56.29	55.63
Lo Pos. Control	53.30	57.40	55.00	53.60	53.89	50.67
Hi Neg. Experimental	26.64	25.31	24.47	24.47	25.88	26.52
Hi Neg. Control	24.40	26.00	25.80	27.40	24.50	24.13
Lo Neg. Experimental	24.35	24.07	22.01	26.73	25.04	24.42
Lo Neg. Control	26.30	24.90	23.20	26.10	26.89	27.89

a. The positivity and negativity scores of the Experimental Groups are based on ratings made by four different Groups of Ss. The four sets of positivity and negativity scores on the Control Ss were derived by obtaining two sets of scores (ratings on positive phrases and ratings on negative phrases) from Ss in the Hi NFA Control Group, and two sets of scores from Ss in the Lo NFA Control Group.

Table 10b

Mean Ratings Per Trial Block on SVT Test
(Hi Mot Ss Only)

Group[a]	Conditioning Blocks				Generalization Blocks	
	1	2	3	4	5	6
Hi Pos. Experimental	57.79	54.43	59.43	55.43	58.00	59.58
Hi Pos. Control	54.43	52.57	52.29	51.29	54.33	53.00
Lo Pos. Experimental	56.31	56.50	57.75	56.63	57.00	56.46
Lo Pos. Control	52.71	57.14	52.71	50.14	52.86	50.14
Hi Neg. Experimental	27.07	25.40	24.60	24.87	25.71	27.43
Hi Neg. Control	24.14	26.86	26.00	28.71	25.00	25.33
Lo Neg. Experimental	25.41	25.18	23.12	27.47	25.80	24.47
Lo Neg. Control	27.57	24.86	24.57	26.43	29.00	29.29

a. The positivity and negativity scores of the Experimental Groups are based on ratings made by four different Groups of Ss. The four sets of positivity and negativity scores on the Control Ss were derived by obtaining two sets of scores (ratings on positive phrases and ratings on negative phrases) from Ss in the Hi NFA Control Group, and two sets of scores from Ss in the Lo NFA Control Group.

Appendix M

COMPARISON OF EXPERIMENTAL AND CONTROL GROUPS ON MEAN NUMBER OF REINFORCEMENTS RECEIVED

It was felt to be desirable that the number of reinforcements received by Ss in each of the Control Groups was approximately equal to the number of reinforcements received by Ss in the Experimental Groups with which they were to be statistically compared. Therefore, t tests were performed comparing the Groups. The results of these tests comprised the following t values, none of which are statistically significant:

	Hi Pos.	Hi Neg.	Lo Pos.	Lo Neg.
All Ss:	1.250	-1.827	< 1.000	1.354
Hi Mot Ss only:	1.032	-1.027	< 1.000	-1.106

Appendix N

SUMMARIES OF ANALYSES OF VARIANCE AND COVARIANCE

Table 11

Analysis of Variance on Positivity Ratings:
Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.16041	55		
A (NFA)	.00038	1	.00038	<1.000
B (reinf.)	.00848	1	.00848	2.914*
AB	.00038	1	.00038	<1.000
Subj. w. groups (error between)	.15116	52	.00291	
Within subjects	.33470	168		
C (trial blocks)	.00193	3	.00064	<1.000
AC	.00617	3	.00206	1.010
BC	.00656	3	.00219	1.074
ABC	.00219	3	.00073	<1.000
C x subj. w. groups (error within)	.31787	156	.00204	

*$p < .10$

Table 12

Analysis of Variance on Negativity Ratings:
Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.94310	55		
A (NFA)	.00733	1	.00733	<1.000
B (reinf.)	.00578	1	.00578	<1.000
AB	.00373	1	.00373	<1.000
Subj. w. groups (error between)	.92626	52	.01781	
Within subjects	.95467	168		
C (trial blocks)	.04885	3	.01628	2.993*
AC	.01967	3	.00656	1.206
BC	.00386	3	.00129	<1.000
ABC	.03342	3	.01114	2.048
C x subj. w. groups (error within)	.84888	156	.00544	

*$p < .05$

Table 13

Trend Analysis on Negativity Ratings of Hi NFA Experimental Subjects: Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.13938	17		
Within subjects	.21308	54		
Blocks	.01207	3	.00402	1.020
Residual	.20101	51	.00394	

Table 14

Trend Analysis on Negativity Ratings of Hi NFA Control Subjects: Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.29243	9		
Within subjects	.27013	30		
Blocks	.01927	3	.00642	<1.000
Residual	.25086	27	.00929	

Table 15

Trend Analysis on Negativity Ratings of Lo NFA Experimental Subjects: Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.69100	17		
Within subjects	.29159	54		
Blocks	.05909	3	.01970	4.320***
Residual	.23250	51	.00456	

F linear = 1.000	
F quadratic = 4.566*	1,51
F cubic = 5.765**	1,51

*p < .05
**p < .025
***p < .01

Table 16

Trend Analysis on Negativity Ratings of Lo NFA Control Subjects: Trial Blocks 1-4

Source	SS	df	MS	F
Between subjects	.03418	9		
Within subjects	.12353	30		
Blocks	.02349	3	.00783	2.111
Residual	.10004	27	.00371	

Table 17

Analysis of Variance on Positivity Ratings: Trial Blocks 5 and 6

Source	SS	df	MS	F
Between subjects	.35105	47		
A (NFA)	.00569	1	.00569	<1.000
B (reinf.)	.02748	1	.02748	3.817*
AB	.00088	1	.00088	<1.000
Subj. w. groups (error between)	.31700	44	.00720	
Within subjects	.08749	48		
C (trial blocks)	.00438	1	.00438	2.655
AC	.00033	1	.00033	<1.000
BC	.01018	1	.01018	6.170**
ABC	.00022	1	.00022	<1.000
C x subj. w. groups (error within)	.07238	44	.00165	

*$p < .10$
**$p < .025$

Table 18

Analysis of Variance on Negativity Ratings: Trial Blocks 5 and 6

Source	SS	df	MS	F
Between subjects	1.39360	49		
A (NFA)	.00011	1	.00011	<1.000
B (reinf.)	.00168	1	.00168	<1.000
AB	.06501	1	.06501	2.462
Subj. w. groups (error between)	1.21490	46	.02641	
Within subjects	.31757	50		
C (trial blocks)	.00078	1	.00078	<1.000
AC	.00325	1	.00325	<1.000
BC	.00246	1	.00246	<1.000
ABC	.00022	1	.00022	<1.000
C x subj. w. groups (error within)	.31086	46	.00676	

Table 19

Analysis of Variance on Subjects' Ratings of Questions 5, 6 and 7 of the Post-Experimental Interview

Source	SS	df	MS	F
Between subjects	65.0902	55		
A (NFA)	1.2057	1	1.2057	1.039
B (reinf.)	3.8561	2	1.9281	1.662
AB	2.0103	2	1.0052	<1.000
Subj. w. groups (error between)	58.0182	50	1.1604	
Within subjects	78.3614	112		
C (questions)	30.7816	2	15.3908	35.784 **
AC	2.4267	2	1.2134	2.821 *
BC	1.0964	4	.2741	<1.000
ABC	1.0424	4	.2606	<1.000
C x subj. w. groups (error within)	43.0143	100	.4301	

*p $<.10$
**p $<.001$

Table 20

Analysis of Variance on Positivity Ratings: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.25628	43		
A (NFA)	.00133	1	.00133	<1.000
B (reinf.)	.03402	1	.03402	6.163***
AB	.00000	1	.00000	
Subj. w. groups (error between)	.22092	40	.00552	
Within subjects	.14372	132		
C (trial blocks)	.00696	3	.00232	2.392*
AC	.00801	3	.00267	2.753**
BC	.01020	3	.00340	3.505***
ABC	.00229	3	.00076	<1.000
C x subj. w. groups (error within)	.11627	120	.00097	

*$p < .10$
**$p < .05$
***$p < .025$

Table 21

Trend Analysis on Positivity Ratings of Hi NFA Experimental Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.10718	13		
Within subjects	.05846	42		
Blocks	.00102	3	.00034	<1.000
Residual	.05744	39	.00147	

Table 22

Trend Analysis on Positivity Ratings of Hi NFA Control Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.08340	6		
Within subjects	.02689	21		
Blocks	.00295	3	.00098	<1.000
Residual	.02394	18	.00133	

Table 23

Trend Analysis on Positivity Ratings of Lo NFA Experimental Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.02068	15		
Within subjects	.03585	48		
Blocks	.00122	3	.00041	<1.000
Residual	.03463	45	.00077	

Table 24

Trend Analysis on Positivity Ratings of Lo NFA Control Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.01187	6		
Within subjects	.03373	21		
Blocks	.01155	3	.00385	3.130*
Residual	.02218	18	.00123	

*$p < .10$

Table 25

Analysis of Variance on Negativity Ratings: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.57679	45		
A (NFA)	.01663	1	.01663	1.318
B (reinf.)	.02577	1	.02577	2.042
AB	.00457	1	.00457	<1.000
Subj. w. groups (error between)	.52982	42	.01262	
Within subjects	.72665	138		
C (trial blocks)	.05893	3	.01964	4.621**
AC	.03890	3	.01297	3.052*
BC	.02315	3	.00772	1.816
ABC	.07080	3	.02360	5.553**
C x subj. w. groups (error within)	.53488	126	.00425	

* $p < .05$
** $p < .005$

Table 26

Analysis of Variance on Negativity Ratings of Hi NFA Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects		21		
A (reinf.)	.02582	1	.02582	1.684
Subj. w. groups	.30662	20	.01533	
Within subjects		66		
B (trial blocks)	.05973	3	.01991	3.844*
AB	.08333	3	.02778	5.363**
B x subj. w. groups	.31105	60	.00518	

* $p < .025$ level
** $p < .005$ level

Table 27

Analysis of Variance on Negativity Ratings of Lo NFA Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects		23		
A (reinf.)	.00446	1	.00446	<1.000
Subj. w. groups	.21252	22	.00966	
Within subjects		72		
B (trial blocks)	.03827	3	.01276	2.270*
AB	.01011	3	.00337	<1.000
B x subj. w. groups	.37089	66	.00562	

* $p < .10$

Table 28

Analysis of Variance on Negativity Ratings of Experimental Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects		31		
A (NFA)	.00303	1	.00303	<1.000
Subj. w. groups	.28753	30	.00958	
Within subjects		96		
B (trial blocks)	.03873	3	.01291	2.440*
AB	.02120	3	.00707	1.336
B x subj. w. groups	.47569	90	.00529	

* p < .10

Table 29

Analysis of Variance on Negativity Ratings of Control Subjects: Trial Blocks 1-4 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.11365	13		
A (NFA)	.01386	1	.01386	1.666
Subj. w. groups	.09979	12	.00832	
Within subjects	.44978	42		
B (trial blocks)	.04201	3	.01400	1.491
AB	.06969	3	.02323	2.474*
B x subj. w. groups	.33808	36	.00939	

* p < .10

Table 30

Analysis of Variance on Positivity Ratings: Trial Blocks 5-6 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.31095	37		
A (NFA)	.00511	1	.00511	<1.000
B (reinf.)	.03125	1	.03125	3.877*
AB	.00051	1	.00051	<1.000
Subj. w. groups (error between)	.27409	34	.00806	
Within subjects	.06190	38		
C (trial blocks)	.00187	1	.00187	1.154
AC	.00153	1	.00153	<1.000
BC	.00324	1	.00324	2.000
ABC	.00009	1	.00009	<1.000
C x subj. w. groups (error within)	.05517	34	.00162	

* $p < .10$

Table 31

Analysis of Variance on Negativity Ratings: Trial Blocks 5-6 (Hi Mot Ss Only)

Source	SS	df	MS	F
Between subjects	.77680	41		
A (NFA)	.01000	1	.01000	<1.000
B (reinf.)	.00197	1	.00197	<1.000
AB	.05085	1	.05085	2.706
Subj. w. groups (error between)	.71398	38	.01879	
Within subjects	.14342	42		
C (trial blocks)	.00009	1	.00009	<1.000
AC	.00179	1	.00179	<1.000
BC	.00089	1	.00089	<1.000
ABC	.00241	1	.00241	<1.000
C x subj. w. groups (error within)	.13824	38	.00364	

Table 32

Analysis of Covariance on Trait Questionnaire

Source	SS	df	MS	F
A (NFA)	.2280	1	.2280	2.774
B (reinf.)	.1747	2	.0874	1.063
AB	.1058	2	.0529	<1.000
Error	5.9200	72	.0822	
		77		

Table 33

Analysis of Covariance on Trait Questionnaire
(Hi Mot Ss Only)

Source	SS	df	MS	F
A (NFA)	.5837	1	.5837	8.871**
B (reinf.)	.5520	2	.2760	4.195*
AB	.1990	2	.0995	1.512
Error	3.6856	56	.0658	
		61		

** $p < .005$
* $p < .025$

Table 34

Analysis of Covariance on Personality Questionnaire

Source	SS	df	MS	F
A (NFA)	.468	1	.468	<1.000
B (reinf.)	50.564	2	25.282	1.274
AB	13.763	2	6.882	<1.000
Error	1451.952	72	20.166	
		77		

Table 35

Analysis of Covariance on Personality Questionnaire
(Hi Mot Ss Only)

Source	SS	df	MS	F
A (NFA)	1.945	1	1.945	<1.000
B (reinf.)	28.716	2	14.358	<1.000
AB	21.816	2	10.908	<1.000
Error	1056.347	53	19.931	
		58		

Table 36

Analysis of Variance on Subjects' Ratings of Question 2:
Validity Questionnaire

Source	SS	df	MS	F
Between subjects	339.474	77		
A (NFA)	24.554	1	24.554	6.629*
B (reinf.)	2.049	2	1.025	< 1.000
AB	46.180	2	23.090	6.234**
Subj. w. groups (error between)	266.691	72	3.704	
Within subjects	104.305	156		
C (trials)	.777	2	.389	< 1.000
AC	.023	2	.012	< 1.000
BC	.721	4	.180	< 1.000
ABC	8.590	4	2.148	3.284*
C x subj. w. groups (error within)	94.196	144	.654	

* $p < .025$
** $p < .005$

Appendix O

VALIDITY QUESTIONNAIRE: SCORES, AND CORRELATIONS BETWEEN THE QUESTIONS

Table 37

Intercorrelations Between Subjects' Ratings of Questions 1, 2, 3, and 4: Validity Questionnaire[a] (Pearson r)

Questions	Questions		
	1	2	3
2	.563		
3	.522	.423	
4	.650	.366	.538

a. All correlations are statistically significant ($p < .01$).

Table 38

Mean Ratings of Question 2: Validity Questionnaire

NFA	Type of Phrase Reinforced	N[a]	Group	Conditioning	Generalization
Hi	Pos.	16	6.375	6.938	6.750
	Neg.	17	6.588	6.235	6.118
	Rand.	6	7.333	7.500	7.500
Lo	Pos.	14	6.929	6.357	6.286
	Neg.	16	6.026	6.625	6.625
	Rand.	9	5.222	5.667	5.333

a. Scores are based on ratings made by Ss for whom data were available on all three administrations of the Questionnaire.

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